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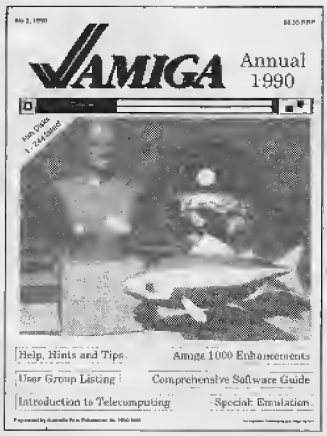

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WELCOME TO OUR third *Amiga Annual*! Having a sneak look to see what's inside? You will find the software guide at the back - a complete listing of all Amiga software available in Australia - an invaluable addition to your library. Not to mention the list of user groups, and a complete catalogue of all the Fred Fish public domain disks. There's plenty of budget software to be found there.

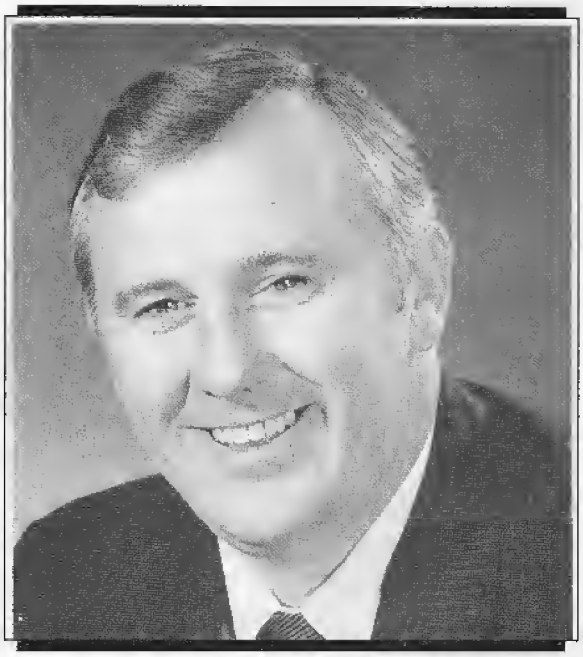
As usual we have also covered a number of topics in more detail. You'll find a fine introduction to Desktop Video, candid advice on Desktop Publishing, hints on customising your Workbench and a great guide to getting into Telecomputing.

We also took another look at some of the best products to hit Amiga screens during the year - just in case you're new to the game, or missed the introduction first time around. We should point out that hundreds of new programs are released every month - the only way to keep up is to read about them. How?

Here at the *Amiga Annual*, we use Amigas for just about everything. In fact, we produce a monthly magazine called *The Australian Commodore and Amiga Review*. It's especially dedicated to helping new users learn about their machine, and informing experienced users about what's new and what's not.

The best way to make sure you get a copy is to subscribe. Many of our regular readers find the magazine sells out before they get a chance to buy a personal copy. Also remember - if you're in a User Group or work at a computer store, you can arrange to have further copies of the publication or our monthly magazine delivered at a special rate. Call (02) 817-0011 for further information. Enjoy! ❑

Andrew Farrell
Editor



THERE ARE MANY computer companies in the marketplace, each trying to carve out their own little "niche". Some concentrate on games machines - others the top end of the home market, home offices, and so on. Others look at small business, while yet others are after the large corporations, government and professional users.

There is only one company which covers *every* section of the marketplace. That company happens to be the world's largest manufacturer of computers.

Of course, it's Commodore.

The Commodore 64 covers both the games and the home computer market. In fact, this remarkable machine is the world's largest selling individual model - over seven million of this one machine have been sold!

For small business, we have the PC range. Commodore top-end PC models cover the corporate and government markets.

And then, of course, there is the amazing Amiga - one machine which is so versatile it covers every market from the home hobbyist right through to the large corporate and dedicated professional user.

The Amiga represents the future of computing with the ability to multi-task, combined with superior graphics. These features, along with its ability to perform "mundane" tasks such as word processing, accounting and so on means it really is the machine for every market.

The Amiga will continue to gain acceptance, not only in the home market and the business/professional market, but also in Education. As more and more software is released, this growth will compound.

We believe that the Amiga will, during the next couple of years, become the Standard in Education Computing. At Commodore we are doing everything we can to make this happen: in the past 12 months we've donated nearly a quarter of a million dollars' worth of Amiga hardware and software to schools, colleges and universities as part of our Education Channel program.

As you would know, Commodore computers are sold right around the world (over 51 countries, to be precise!). World-wide, the company has enjoyed excellent results over the past year, with the Australian results right at the top.

You, as Amiga users, have helped us achieve this, and I personally thank you.

Indeed, every member of the Commodore staff, the 1500+ dealers and their staffs, software and hardware suppliers, and so on, thank you.

By supporting Commodore you are helping to keep thousands of other Australians, and their families, housed, clothed and fed. That makes you pretty important to all of us!

If we at Commodore ever do anything that makes you think you're not important, please let me know. ❑

Pat Byrne,
Managing Director,
Commodore Business Machines Pty Ltd.

Which Amiga?

by Andrew Farrell

ALAS, THE OLD A1000 is no longer available. Last year we lived in hope of rumours to the contrary. However, its demise is not complete. If you have an old A1000 or are considering purchasing one second-hand, check out the article a few pages farther on by Tim Strachan.

For other potential buyers, the question of specifications still arises. Which computer, which disk drive, how much memory. In this article we will attempt to answer some of the often asked questions about buying an Amiga.

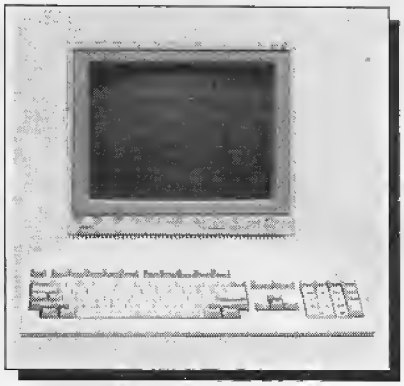
Commodore offer three different Amigas. The Amiga 500, 2000 and 2500. The A3000 will be available this year too - keep reading the *Australian Commodore and Amiga Review* for information.

A500

● An ideal starting point for beginners. All the usual Amiga features, with the operating system, Kickstart 1.3, built into ROM. Parallel and serial ports use standard IBM type connectors, which is a good thing.

The keyboard has a solid feel, and is well spaced. A few Kickstart 1.2 based programs will not work, however these are quickly being upgraded to the new format. The problem is with the software designers, not with Commodore.

Although not as expandable as the other models, it is surprising just how much you can cram into the A500 - especially now the A590 external hard drive is available with room for an additional 2 Megabytes of RAM on board. An extra 512K, plus clock/calendar, may be added via a slot on the underside. Third party add-on companies have made up to 1 Megabyte extra possible via the same slot.



Amiga 500

At around $899, complete with built-in disk drive, the A500 is relatively inexpensive when compared with machines that have similar power. An adaptor is available to allow connection to your colour television.

We recommend at least 1 Megabyte of RAM if you consider yourself a serious user. Even game players will find the extra memory useful with some of the newer games.

An external drive should be the next important purchase! Many games run on two disks, and for wordprocessing or other business use, two drives are essential.

Although a TV may suffice for casual games playing, a monitor is really the only way to truly savour the Amiga's rich graphics. You can play the sound through the monitor or connect it via standard RCA type cables to your hi-fi system in stereo!

A2000

● Top gun in the Amiga range, the mighty 2000, has much to offer the serious user. However, there's also plenty for us hardened hobbyists and happy hackers to play with to our heart's content. I've had one of these machines on my desk for some years and recently upgraded to the A2500. You can start at nothing and build to your heart's content and bank manager's delight.

Inside the sturdy steel cabinet you can fit eight megabytes of RAM, a Bridgeboard for running MS-DOS, a hard drive, 5 1/4 inch floppy or additional 3 1/2 inch drive. The system comes standard with one 3 1/2 inch.

The keyboard is a hybrid arrangement of IBM and Amiga keys. MS-DOS users would call it an enhanced keyboard. The latest batch have a good solid feel. Key tops are large, well spaced, and generally provide a pleasant positive feel. Several keys have been repositioned compared to the old Amiga 1000. On the whole each change is largely a matter of what you're used to or prefer.

Current A2000's are arriving standard with the new Fat Agnus chip, enabling you to display more graphics screens, run more applications and record larger digitised sound samples.

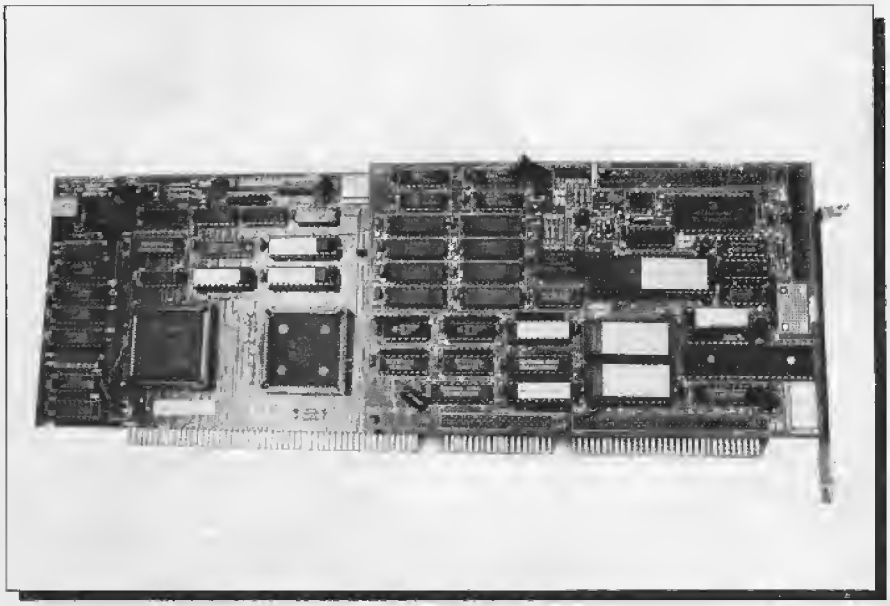
Here's some of the other enhancements you can purchase:-

● **A2024**: High resolution four level monochrome (black, white and two grays), with resolutions of 704 x 200, 704 x 400, and 1008 x 800. The highest resolution will only work with Workbench 1.4.

● **A2300**: Genlock for the A2000 video slot. This looks like an adaptation of the A1300 genlock. A mechanical switch to select between the Amiga, source and combined video output.

● **A2620**: Long awaited and much publicised. The 68020 processor board for the A2000's processor slot. Runs at 14.3 MHz - along with 68881 maths co-processor (a 68882 is optional). You'll also find 64K of ROM, and between two

Amiga 2000



A2286 Bridgeboard

and four Megs of RAM on a 32 bit RAM board.

At the 1988 World of Commodore Show, a 2000 fitted with the A2620 was running Interceptor. A speed increase of just under 100% was calculated on the rolling demo at the start of this game.

● **A2090A**: A SCSI controller card. Upgraded from the A2090 to enable auto-booting under Kickstart v1.3.

● **A2058**: Memory expansion board with 2 Meg on board - an additional 1-6 Megs may be added.

● **A2286**: Big Blue, here we come. An AT version of the bridgeboard. Running at 10 MHz, this 80286-based IBM/PC-AT clone is bound to turn heads - especially if they can get the text output to an Amiga window at a good speed. A socket for an 80287 math chip is included, along with a meg of on-board RAM and a 16K ROM BIOS.

● **A2350**: Professional Video Adaptor occupying the A2000 video slot plus one internal Zorro II slot. Essentially this is a video effects studio similar to Newtek's Video Toaster. It genlocks, freezeframes and freezegrabs in 1/60th of a second. Two RCA composite inputs are provided as well as one RCA composite, and one RGB output. Switching and effects are all software controlled.

A2500

● A bundled system. Two versions - one for ex-Big Blue people, the other for educational types. The A2500-AT version fitted with the A2620 (68020 processor board) with 2 Megs of RAM, an A2090A, 40Meg SCSI drive, A2286 AT bridgeboard, 5.25" 1.2 Meg floppy disk drive and a monitor. Specs are changeable. ❑

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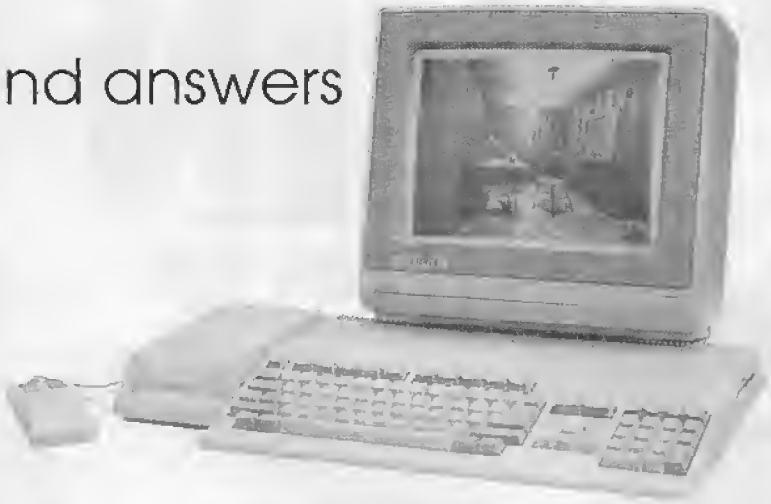
A few questions and answers about the Amiga

by Tim Strachan



Amiga 500 with A590 hard drive

What's so special about the Amiga?

● The clever lads who designed the Amiga (and it wasn't Commodore) happened to hit on the design and configuration that has become the model that all other personal computer makers are now aiming towards. And they haven't got there yet!

This model centres around a multi-tasking operating system; custom chips for graphics and sound and other purposes; a dual interface, in the Amiga's case Workbench and CLI; video compatibility; and open architecture of design, to name a few.

Possibly the most important of these is the multi-tasking - the Amiga's operating system is the only one in personal computing with this very powerful feature, which allows you to run a number of tasks simultaneously, thus doing away with the necessity for print spoolers, "integrated packages" (such as a desktop publishing program with a built-in text editor - just run your own editor in the background), and many other limitations of single-tasking operating systems.

We're talking about a four-year-old design which is still well ahead of the bigger opposition, and there lies the worry - Commodore must get on with the necessary development to keep the edge that the Amiga has and which it will inevitably lose as the years pass. The release of the Enhanced Chip Set (of which the new Agnes graphics chip is now available), version 1.4 of the Operating system, the A590 hard disk and ram unit, and other imminent hardware and software releases indicate that progress is being made in this direction.

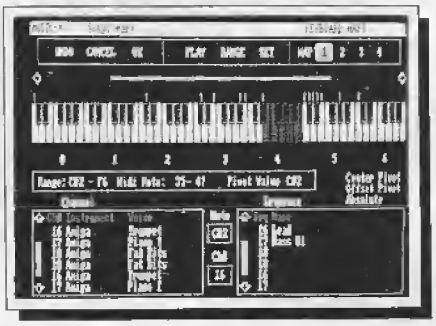
What can I do with an Amiga?

● Everyone knows that computers can run word-processors and business software, and perhaps 80% of all computer use is covered in those applications - in fact most computers have never had the thrill of an exciting game played on them, or a painting created, and that may always be the case. But there is a whole world of other more interesting applications out there, for which the computer, and particularly the Amiga due to its price and power, has become or will become the tool of choice.

● GRAPHICS - as screen resolutions improve and computers become more powerful, the computer will become indispensable in painting, digitising and animation.

● DESKTOP PUBLISHING - already indispensable, due to the ease of use, power and low cost. Already some magazines are 100% produced on Amigas, including colour and all graphics. The advent of Optical Character Recognition will vastly expand these capabilities and solve many of the problems of original data entry.

● IDEA PROCESSING - an interesting companion to word processing, there are programs which can help organise your ideas, providing facilities to arrange, expand and edit them with the click of a mouse.



Music X

● DATABASES - any listing of anything can benefit from entry into a well devised database. Once the information is entered, it can be used and re-used, edited and printed, and subsumed into other databases.

● HYPERTEXT APPLICATIONS - Going further beyond databases, this recent development allows a combinations of text, graphics, sounds and more, all linked together into an easily accessible mega-program.

● DESIGN - whether it be a new design for crotcheting, or a futuristic building, programs exist to make the process faster and editable at a later date.

● CAD (Computer-Aided Design) is here to stay, and is spreading into many areas.

● MUSIC - Sampling, sequencing and composing, along with link-ups to many other music peripherals via MIDI connections, are all making the musician's job much easier as well as expanding his capabilities.

The list goes on and will probably never stop doing so as the realisation grows that practically all data can eventually be reduced to a series of zeroes and ones, manipulated at will and turned into some kind of creative production. For many, the computer is the tool of the late 20th century, and Amiga owners have the jump on the others.

Do I need extra memory and storage?

● The basic Amiga configuration is a computer with a single internal disk drive and 512 Kilobytes of Ram (though

the standard will soon be one megabyte of Chip Ram) and some kind of colour monitor.

Over the four years of the Amiga's development, software has become increasingly voracious for more Ram, the internal memory space in which software runs on the computer, some programs now even refusing to operate in less than a megabyte of ram, others just limping along. So if you're serious about using the Amiga, one megabyte is about the minimum, and two megabytes comfortable. There are good internal ram units now available to add up to two megabytes, and there is of course the A590 which gives you a hard disk along with space for another two megabytes, a substantial system for anyone.

What about another disk drive?

● An Amiga with a single disk drive is a crippled Amiga, unless you have a lot of ram and can operate from a "Ram disk", ie, an equivalent of your Workbench disk loaded into memory. Many programs come on two disks or more, and often information is required from two disks. With a single drive, this means a lot of disk-changing and eventual teeth-gnashing. Even simple operations like a diskcopy becomes a major undertaking.

So a minimal setup requires an external disk drive, giving you the equivalent to two wheels for a bicycle. External drives are available locally for approximately $200. Which brings us on to hard disks.

Do I need a hard disk?

● It's beginning to look like you need a lot of extra hardware, eh? The Amiga is a complex and powerful computer, and software is being written to exploit that power. So if you want to shift into a higher gear, you have to suffer initially. A hard disk is like a huge floppy disk, and comes in sizes ranging from 20 megabytes up to 360 or more.

The advantages of having a hard disk include much greater speed; having all your programs and data in one place (no more searching for elusive floppies); a working setup configured to your own specific needs. Once you've used a hard disk, you won't want to go back to floppy disk drives. 20 Megabytes is the minimum, and considering the size of graphic and sound files and the law that data rapidly accumulates to fill any hard disk, you're well advised to get a 40-meg hard disk, or at least buy a unit that will allow for replacement of the hard disk, or the attachment of more hard disks.

How are disks organised?

● From the Workbench point of view, when you double-click on the icon for a disk, you're presented with a Window, which may or may not have icons showing. (This is the ROOT directory, in CLI-speak.) You may then double-click on an icon that looks like a drawer, say UTILITIES, and another window opens on top of the main window. (This is a SUB-DIRECTORY in CLI-speak.) This process can continue almost as long as you like, giving rise to a branching effect, rather like a family tree where the beginning of the dynasty is the point at the top from which all offspring branch.

The CLI equivalent to what we've just done on the Workbench is:

```
CD DF0:UTILITIES
```

and if you were to open a drawer called NOTES within UTILITIES, it would be the same as typing in the CLI:

```
CD DF0:UTILITIES/NOTES
```

CD here is a command that stands for "Change Directory". Let's say you were to double-click on the NOTEPAD icon in the UTILITIES drawer. *Notepad* is a "tool" or "program" and double-clicking makes it start up. The equivalent in the CLI is:

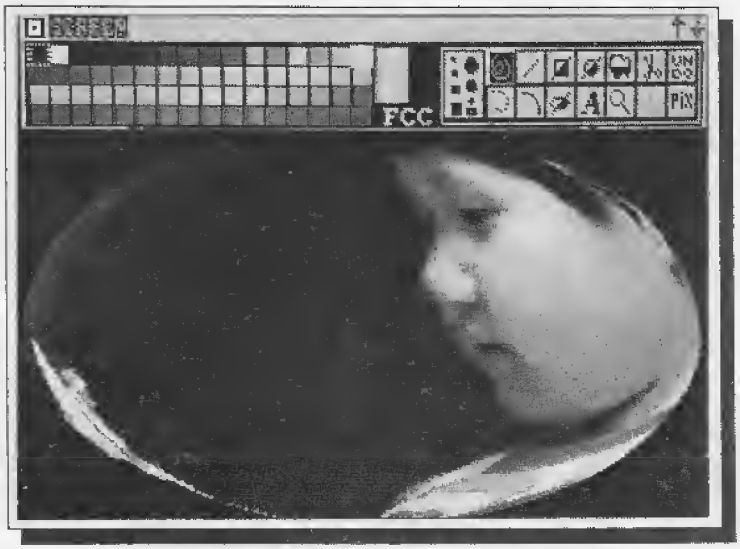
```
RUN DF0:UTILITIES/NOTEPAD
```

Amiga 500 512K RAM expansion

The result would be the same - *Notepad* would appear on screen in its own window ready to take your notes. In short, there are equivalences and correspondences all along the way between the CLI and the Workbench. Once you know the workbench, experiment with the CLI, preferably with the help of a manual or some examples. The "Amigados Manual" by Bantam books is one, and another is the "Megados Disk-manual" by Megadisc.

How do I install a printer - What are the various devices?

● When you attach your printer to the Amiga, you need a piece of software called a "printer driver" in a specific place on your Workbench disk. In the 1.3 release of the operating system, all the available printer drivers are in a directory called "Printers" within a directory called "Devs" (for devices) on the EXTRAS disk. There is a "PrinterInstall" icon, which when double-clicked will take you



Photon Paint

Okimate 20 colour printer

through the process of installing your specific printer driver on your Workbench disk.

Alternatively, you can double-click on the CLI or SHELL icon on your Workbench disk, and enter: COPY EXTRAS:DEVS/PRINTERS/driver-name to DF0:DEVS/PRINTERS and when you open Preferences to set up your printer, you'll find the name of your particular printer driver in the appropriate window.

Your whole system runs on specific pieces of software, some of which is loaded into memory when you "boot up" with your Workbench, and some of which is on the Workbench, to be loaded up when needed. So if you want to use a modem for telecommunications, you'll need to have the "Serial.device" on your Workbench, since communications via a modem use a cable plugged into the serial port on the back of your computer, and that serial port is managed by the "serial.device" software. Normally you would leave all the "device" software on the disk and have no trouble using the various connections and ports.

What about viruses?

● Viruses do exist but can cause minimal trouble if you take reasonable care. All you need to have is an up-to-date virus checker and make sure that you use it to check all bootable disks that you come across. (A "bootable disk" is simply a disk which will start the computer when the Workbench hand appears.)

Two good local virus checkers are: *ZeroVirus* by Jon Potter, available on the Megadisc disk-magazine, and *NoVirus* by Nic Wilson, a commercial product costing about $35.

Pirated software is often the way many computers get viruses - a lose-lose situation, since the writer of the software is robbed, and the user gets a virus. So stay away from pirated software.

Why do I need to format disks?

● When you buy a blank new 3.5" disk from a shop, it's a clean slate, and could be used by any number of computers. To make it palatable to the Amiga, you have to "format" the disk, meaning that then the Amiga can recognise the disk as readable and writable by the system. (When you do a "diskcopy", formatting is automatic).

To format such a disk, slip it into a disk drive, click once on the icon for the disk, and then select the "Initialise" menu with the right mouse button depressed. Follow the instructions, and you'll have a formatted disk which can then be used to store your word-processing files and any other data or programs you have.

Read/Write errors

● Occasionally your disk drive will bump and grind, and eventually tell you that the disk in the drive has a "read/write error". This can happen for various reasons: a cosmic ray burst splatted the poor disk; it was of inferior manufacture and has a "hard" error, ie a problem with the surface of the disk; some foreign body has crept onto the surface, etc.

Often this will spell the end of the disk, but not necessarily. Use the public domain program *Disksalv* or if necessary the *Diskdoctor* program on your workbench disk to save the data on the disk. *Diskdoctor* is used by opening a CLI and, presuming your dud disk is in the external drive, enter:

```
DISKDOCTOR DRIVE DF1:
```

and then follow instructions. After this operation, you should try to format the disk - if the formatting process goes without a hitch, you should have a restored and usable disk.

How do I move fonts around and change them?

● Say you've found a font called XFONT in a directory called OTHERFONTS on a disk in your external drive DF1: and you want to copy it to the fonts directory of your workbench disk, for use in NotePad or *DPaint*, or whatever. Say also it has two font sizes, 8 and 12. Every font is really a directory containing a number of files corresponding to the sizes of fonts available in that typeface; and connected to this font is another file called, in this case, XFONT.FONT. All these must go to the target directory, so open a CLI and enter:

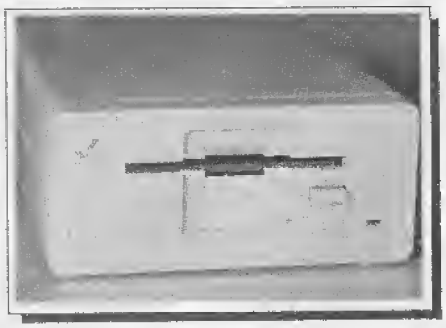
```
MAKEDIR DF0:FONTS/XFONT CD
DF1:OTHERFONTS/XFONT COPY TO
DF0:FONTS/XFONT ALL COPY
DF1:OTHERFONTS/XFONT.FONT TO
DF0:FONTS
```

Now the complete XFONT will be available from your workbench disk.

The trouble with using other, non-Workbench fonts is setting them up in the Fonts directory of your disk (as described above), and the fact that some programs will show only a limited number of fonts from the menus, and also a problem of fitting a bunch of fonts on an already full disk.

One way around these problems is to simply set up a disk full of the fonts you want, and call the disk FONTS. If the disk is in a disk drive at the time your program is asked to look for fonts, it will recognise the "physical device" Fonts: (ie, the disk drive) before the "logical device" Fonts: (ie, the directory called Fonts on your system disk). This will allow you to have as many fonts as you like on your Fonts disk, and also to have a bunch of different Fonts disks ready for different purposes.

Another way to access different fonts is to use the ASSIGN command. Say you've got a directory full of fonts somewhere (on your hard disk, or another PD fonts collection) called "Large Fonts". Before accessing them from a program (such as *Pagesetter*, *DeluxePaint*, *Notepad*, etc.), enter in a CLI ASSIGN FONTS: DF1:LARGE FONTS (assuming the directory is on a disk in your external drive), and then you'll get them automatically from then on. ❑



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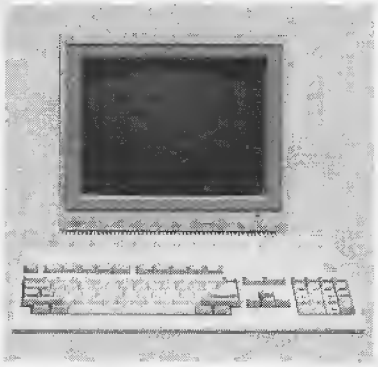
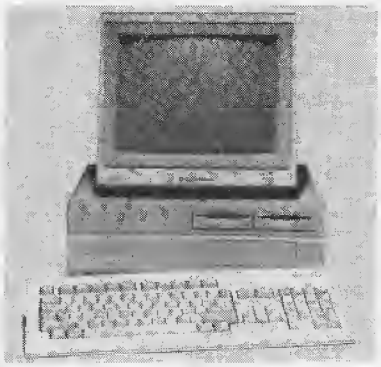


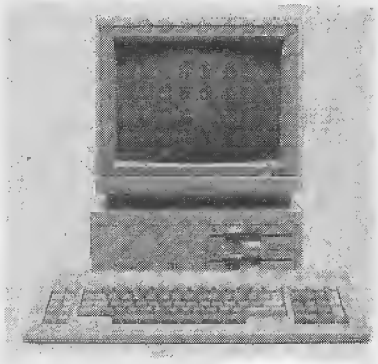
Commodore Amiga 500

With features such as multitasking and upgrading options, it's Australia's best selling small business computer.*



Commodore Amiga 2000

A true investment, because of its capability to expand, it offers multitasking to ensure versatility and increased productivity.



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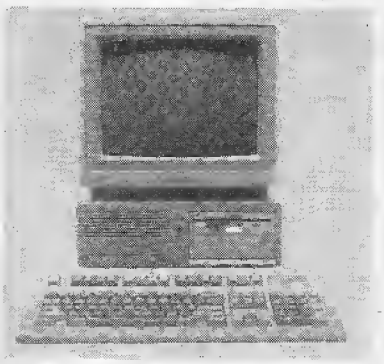

Commodore PC 10 III

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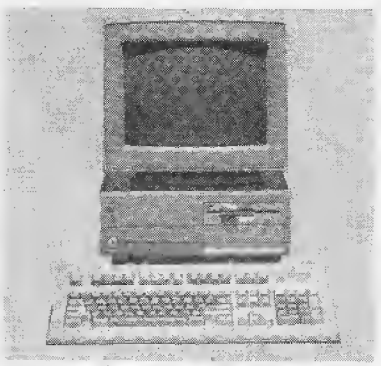

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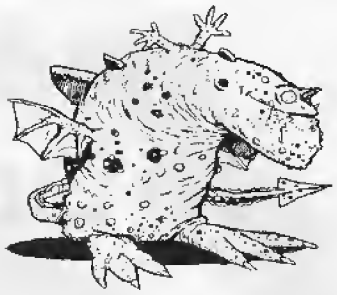
Watch out - Virus!



by Andrew Farrell

Although heralded by some as a figment of the computer writer's fertile imagination, virus problems are very real-more so in the Amiga community than anywhere else.

THE PROBLEM IS compounded by the largely uncontrolled and for the most part illegal exchange of software which continues to take place. That is not to say that you can only catch a virus by pirating software, or that commercial programs are immune to viral infection. Everyone is at risk. Everyone needs to take precautions.

What is a virus?

● A computer virus is not biological. A strange statement, you may say - but amazingly I have overheard people discussing the subject as if that is what they were dealing with. However, the parallels are many. A computer virus is a computer program. Normally it is only very small, undetectable to the casual user. Like a virus in your body, a virus in your computer can reproduce itself.

It doesn't generate hundreds of duplicates in the computer's memory. Rather, the program is designed to wait for the user to insert an uninfected disk. At the first opportunity, the program then saves a copy of itself onto the previously clean disk. Replication is complete - the virus starts to spread. Programmers or hackers who write these nasty sections of destructive code have more technical know-how than ethics. Yes, these are smart kids in most instances. As a result, virus programs are tough. You can't get rid of them from memory simply by pressing CTRL-Amiga-Amiga. No, with a little tricky programming, the virus is made to survive this seemingly terminal action, and continue its existence into the user's next computing session.

A virus is nasty. Earlier strains were fun. Little messages, funny tunes, unusual graphics. Now they're plain dirty. They erase disks, cause read errors, blank out the screen and freeze the keyboard. There is good reason to take care you don't catch a virus.

How can I catch a virus?

● One Saturday, you drop around to a mate's place to take a look at a few new games. After checking out his latest additions, you pull out your treasured disk box and boot up a few of your own latest graphics animations. You don't swap any software. You don't even copy a file.

Later that night, back home, your computer freezes up right in the middle of typing in a school assignment, business letter or home budget. Disgusted, you reboot using the CTRL-Amiga-Amiga sequence. All your work was lost - you don't normally save until just prior to printing. About 20 minutes later the exact same freeze happens. The following day, you find that the computer is still playing up and finally decide to drag in to the local service centre. They check it out, and return the machine saying there is nothing wrong.

This is a typical scenario which we have come across dozens of times. A friend's software is infected, and by simply booting one of your disks in his machine, you catch the same virus. The problem is unexpected. Fortunately, service centres are now more aware of the virus problem. A good one will always insist you bring the Workbench disk you booted with prior to the problem occurring.

Nevertheless, a wasted journey even if the technical lads do discover the problem. And a lot of wasted typing. You didn't do anything wrong, but you caught a virus. The problem is, you didn't do anything right either. The problem's there - it's up to the user to take precautions.

How not to catch a virus!

● There are a few simple precautions to take to ensure you don't catch a virus when visiting friends, exchanging software, or downloading files from a Bulletin Board. First of all, make sure you have a good virus detection and removal program. There are plenty around. Don't waste money on an expensive commercial program. The best ones are public domain - although Nic Wilson's commercial *NoVirus* is also very good and very easy to use.

With the Anti-Virus program of choice safely tucked away, you're prepared. If one slips through the net, you can snuff it out before it's too late. If weird things happen while you're using your computer, you can run a few basic tests using the software to check for new virus strains.

The next step is to make a clean backup copy of your favourite Workbench disk. If the worst comes to the worst you may find your working copy is ruined - a backup is a must. Keep it write protected.

It is not possible to always keep your working copy write-protected. From time to time we all swap preference settings around and these must be saved. However, other important disks such as word-processors can be kept write protected all the time. No virus can or ever will be able to overwrite the write protect tab. The disk drive makes that physically impossible.

The next step is to take care when

running foreign disks through your machine, or your disks through a foreign machine. Switch off to be sure before or after booting as appropriate - this will cleanse the memory of anything nasty that's made itself at home.

When you get a new disk, run it through your Anti-Virus program first to be sure. This mainly applies to bootable disks - the other sorts are pretty safe.

If a program doesn't seem to do as expected - or takes a long time to go about its business - be careful. You may have a Trojan horse on your hands. These are programs that have the equivalent to what some disks have in their boot blocks tacked into the program - a virus. They work the same in the long run.

It is suspected that many of the so-called boot block virus programs started out as part of another, innocent program which generated the original boot block.

Make a back-up of important games or game boot blocks. The later is more time-consuming but uses fewer disks. Many games have a custom boot-block that if lost due to being overwritten by a virus may render the game useless. The boot block is the first block on the disk which contains a program used when the disk is first inserted at the Workbench prompt.

Take care when using an Anti-Virus program. Sometimes these game boot blocks will show as an unknown format. Do not immediately erase the boot block by installing the disk. If you're unsure - ask an expert, or just leave it alone.

How do you get rid of a virus?

● Getting rid of the virus is easy, provided you have a clean copy of your Workbench disk. If you don't, you will definitely need an Anti-Virus program. If you do, there is a simple procedure that will help in some instances. However, if your Workbench is infected and you follow this sequence, you may actually be helping the Virus to spread further!

● If you know for sure that you have a simple boot-block virus, try this first. If in doubt, only use a proper Anti-Virus program.

● Turn the computer off for 15 seconds, then switch on and boot off a Workbench you're certain is clean (the original is usually fine).

● Copy the 'Install' command from the c directory to RAM: disk. 'CD' to RAM: . Now insert the suspect disk(s) into df0: and type:

Install df0:

After the drive light goes off for a while take the disk out and repeat for any other disks you have which do not have custom boot blocks and may have been infected. This will obliterate any virus from your disks which lives in the boot block.

The best solution!

● Anti-Virus Programs. Our Anti-Virus disk contains a whole swag ofdifferent Anti-Virus programs. Here's how they work:-

● By detecting and disabling the virus in RAM.

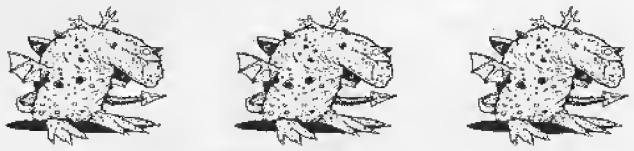
● Deleting the infected file/boot block.

● Optionally replacing the boot block with a small program which will stay in memory like a virus, but act in such a way that virus strains are detected when you attempt to boot an infected disk.

Step one is essential, as unless the virus is first disabled, it may actually turn your install command or equivalent into an install virus command!

Viewing a virus is simple using Viewboot. Any disk which has lots of garbage in its bootblock and no sign of "dos.library" on the second line of the listing and you're in trouble. If you knowthe disk is not a custom boot block, you should definitely install it.

Get yourself a copy of ACAR's Anti-Virus disk which is a great boon to all users of the Amiga. All current strains are described, and detectable. There are also several boot block protectors to help stop infection in the first place. Also, the latest file or IRQ virus strains are also handled. To order use the form on page ?, or call (02) 817 0011. ❑



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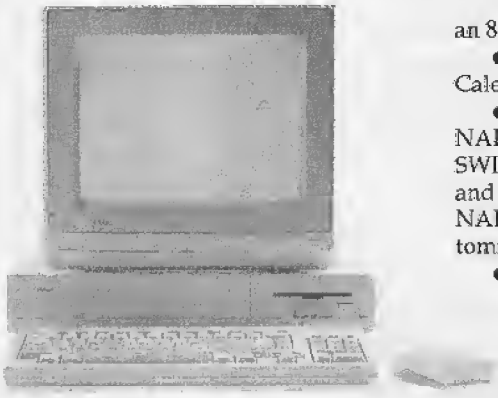
Whither the Amiga 1000 ?

by Tim Strachan

WHEN THE FIRST Amiga 1000s appeared in Australia with little or no fanfare in the middle of 1986, they were snapped up by wild-eyed cognoscenti who had somehow found out what the Amiga was capable of. The design was snappy, the machine was built rather than manufactured, and those who followed computing trends realised the remarkable power and potential of such a design.

As with the release of any new computer, there were nervous times in the first two years as users waited hopefully for software to appear. At the very beginning, the operating system software was buggy, and practically the only software available was *DeluxePaint*, which may well have saved the computer from a sad demise, rather like a nice Ferrari rusting away for lack of petrol.



Commodore has tolerated the existence of the A1000, but it seems that with the release of the Enhanced Chip Set, the A1000 will finally be obsolete - the new chips are incompatible with the design of the A1000 so it seems to be wailing and gnashing time.

Let's give the A1000 a new lease of life

As it turned out, in spite of all the early problems, the Amiga sold itself more by word of mouth than any other way, and the software started flowing and the games companies began to realise what an excellent games machine it was. It still is, but behind the wild sound and graphics was a computer that could do pretty much anything you wanted it to do.

Commodore realised what it had, and brought out the A500/2000 models, more manufactured than built perhaps, but still with all the power of the original Amiga. The production of the A1000 was discontinued but most A1000 users were hanging on to their machines, for various reasons: it is as strong as a tractor; the operating system software can be upgraded by simply slipping in another Kickstart disk; they already had various peripherals, such as RAM expansion which wouldn't go on the newer machines. And they just liked them better.

But wait! The Amiga has always depended heavily on support by third-party suppliers of hardware and software, and many of these people seem to know the machine better than the company which produces it. Already in the US a replacement board for the A1000 has appeared which will allow compatibility with the Enhanced Chip Set, and give it a video slot to boot.

A similar scheme is afoot in Australia. A group called Phoenix Micro Technologies in South Australia have designed a PAL replacement motherboard for the A1000 with the features mentioned above, as well as those mentioned below:

- The ability to use your existing expansion connector peripherals.
- Up to 2 Megabytes of switchable RAM on the main board.
- Up to 10 megabytes of INTERNAL, switchable autoconfiguring RAM using an 8 Meg daughterboard.
- INTERNAL Real Time Clock and Calendar (500/2000 compatible).
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- INTERNAL Disk Drive Connector allowing internal fitting of DF1:, DF2:, and DF3: (if fitted in a larger case.)
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- A500/2000 style switchable Audio Filter.
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- FULL B2000 style VIDEO SLOT.
- One Amiga 2000 slot, allowing a 2000 board to be plugged in, or a 2000 type multi-slot backplane to be used. (Only in a bigger case).
- Provision for a SCSI Port for Hard Disk, CD ROM etc.
- BOARD FULLY SOCKETED.

Sounds great, eh? There is only one problem: development and production of this unit, which should cost about $600, is expensive; the developers are not rich, and they need your support in the form of a pre-paid deposit of $100 (or more). Payment of this deposit will give you a 20% discount on the final unit. If there is not sufficient support, the project cannot get under way (in which case all deposits will be refunded), so I urge you to contact these people and pledge your support in one way or another.

Let's give the A1000 a new lease of life and take it into the '90s.

Contact Andrew Wilson on : (08) 293-3960 (6.00-7.00pm except Friday)

or write to :

2 Meredyth Avenue
Millswood
South Australia 5034.

Computing Concepts ... - if you must know!

by Alexander Lambert

FOR THOSE OF YOU who like to know what makes it tick, here's a down to earth explanation of some of those trickier terms you'll come across.

Binary

● As a user looking at text or pictures on the monitor, it is difficult to believe that all the calculations within the computer are accomplished using only zeros and ones.

Each binary bit can have only one of two states, on or off. If the bit is on, the value is one, and if the bit is off its value is zero. In your Amiga computer the number of bits that can be set is 16. In simple terms this means that the CPU can address 16 external bits. Internally the CPU can combine two groups of 16 bits (words) and produce a 32 bit word. Smaller machines can address only eight bits externally and are referred to as eight bit machines.

The most common numbering system familiar to the average user is the decimal system. This system uses a base of 10 to represent large or small numbers. Any combination of the digits 0-9 are combined to produce the required number. The system uses single digits to represent any quantity from 0-9, after 9 the units to the left become multiples of 10, i.e. 10, 100, 1000, 10,000 etc.

For example the number 10,545 is made up from one unit of 10,000, five units of 100, four units of 10 and five single units. As you move digits to the left in the decimal system the quantity becomes ten times the value of the digit to the right.

In binary the base is two- a combination of only two digits are used to represent any quantity. As you move to the left the quantity is double the preceding number.

The first digit is 1 then 2, 4, 8, 16, 32, 64, 128, 256, 512 1024 etc. The numbers represent the bit values that need to be set to make a binary number.

A binary number is just a group of zeros and ones and looks like this;

01000101111

The table below may help to show the different values for decimal, binary and bit values.

```
BIT VALUE:1024 512 256 128 64 32 16 8 4 2 1
BINARY:     0   1   0   0  0  1  0 1 1 1 1
DECIMAL:  559
Binary: 01000101111=559
```

Once the user understands how the binary system works, its quite easy to convert a decimal number to binary and vice versa. It is much easier to explain if you participate, so take a sheet of paper and near the top of the page write the numbers like the the row shown below.

1024 512 256 128 64 32 16 8 4 2 1

This row of decimal numbers represents the bit values.

Now pick a decimal number at random, and write it on your piece of paper, I picked the number 732 for this example.

To convert the number to binary, look along the bit value row from the right to the left, until you find the first bit value larger than the number you chose to convert. Now move back (to the right) to the next smaller number. For the number I picked, (732) the bit value would be 512, the next higher bit to the left would be too large (1024).

Put a one (1) under the 512 bit. Take the bit value of 512 from your number 732, this will leave you with 220 i.e. 732-512=220.

Now look at the next bit to the right, as you can see it is larger than your decimal 220, so place a (0) zero under its bit value, and move one bit to the right.

This bit is 128 and is smaller than 220, so place a (1) under it and take its value from 220, leaving you with 92 i.e. 220-128=92.

Continue with the next bit, it is smaller than 92 so place a (1) one under it and take its value from 92 i.e 92-64=28.

The next bit (32) is too large so place a (0) zero under its bit value and move to the next bit on the right. This bit, (16) is smaller than 28 so place a (1) under it and take the bit value from 28 i.e. 28-16=12.

The next bit value is (8), place a (1) under it and take the bit value from 12 i.e. 12-8=4. Move right to the next bit value, (4) and place a (1) one under it then take its bit value from 4 i.e 4-4=0.

You should be left with zero (0), so place a zero under the remaining bit values (2 and 1). The row of ones and zero is the binary number 1011011100 the equivalent to decimal 732.

To check if you are correct take each bit value set with a one (1) and add them all together i.e. 512+128+64+16+8+4=732.

The conversion from binary to decimal is just as easy, just start from the right and write the decimal values above each of the binary bits, then add each of the set bit values together.

As an example you want to find the decimal value of the binary number;

0 1 0 0 1 0 1 1 0 1 0

Write the binary number on a piece of paper and spread the numbers out so the bit values can be placed above each of the binary bits.

0 1 0 0 1 0 1 1 0 1 0

Start at the far right of the binary number and put the bit values above each binary bit one then two, four, eight, sixteen, etc. the example below shows how this is done.

```
1024 512 256 128 64 32 16 8 4 2 1
   0   1   0   0  1  0  1 1 0 1 0
```

For each binary bit that has a one (1) write down its bit value and add all the values together i.e 512+64+16+8+2 If you did it correctly the answer is 602 decimal. Try out some numbers picked at random and see if you can convert them.

Have you ever wondered how a letter of the alphabet is displayed on the screen, if the computer works only in ones and zeros. The answer is quite complicated, but to keep it as simple as possible, think of the screen as rows and columns of tiny dots. These dots are pixels (picture elements) the computer can address, and turn on or off.

If the computer addressed the screen in small blocks of eight pixels by eight pixels, one complete block turned on would produce a small square at a particular location on your screen. An enlarged version of the binary equivalent would

look like this;

All the pixels in the 8*8 square are turned on.

```
11111111
11111111
11111111
11111111
11111111
11111111
11111111
11111111
```

Instead of all the bits being set to one (1), we can turn off some bits and produce a letter of the alphabet like this;

Now some bits are on while others are off.

```
00011000
00111100
01100110
01100110
01111110
01111110
01100110
01100110
```

Now join all the ones together and you have a rather crude upper case letter A. If you take off all the zeros the letter "A" is much easier to see.

With the off bits removed the letter "A" is more clearly defined.

```
   11
  1111
 11  11
 11  11
 111111
 111111
 11    11
```

Each 8*8 pixel group can form any alphanumeric character, and the computer can place that character anywhere on the screen. There are many books on this subject, and if you find it as fascinating as I do, ask your computer dealer for a look at the books he has in stock.

ASCII

• Most users have heard of Morse Code, and how it is used in communications. Morse Code is a set of characters that represent letters of the alphabet or numbers. Each alphanumeric character is made up from only two morse characters i.e. the dot and the dash, or dit and dah. Shorthand is similar in this respect as it too has characters representing letters of the alphabet, as well as whole words and sentences.

When a computer addresses the printer, a standard type of language must be used to enable the printer to understand it. This standard language is known as ASCII, which is the abbreviation for American Standard Code for Information Interchange.

Computers from different manufacturers sometimes have different operating languages, and it is impossible to run a program designed for one type of computer, on another using an incompatible language.

Although it is impossible to run a program, there must be some way to transfer files from one computer to another. The answer is "ASCII", (pronounced asskey) each computer can understand each other, and any device using ASCII can be addressed by a computer regardless of what make or computer it is.

Just like Morse Code each letter of the alphabet has an ASCII equivalent. The old teletype machines used a language somewhat similar to ASCII for communicating with each other. Because they were in effect a typewriter, there are extra characters for a line feed, carriage return, back space etc.

Today's modern dot matrix and daisywheel printers use an ASCII code for their operation. This code is referred to as an escape code because the ASCII equivalent of the escape key precedes any other character in most of the commands.

The only problem is that each printer manufacturer uses different control characters for their printer's operating code. For example printer "A" will use a combination of ASCII characte'r to switch on bold print, with another printer the same group of ASCII characters might turn on italics.

With each different printer or device, there is a set of escape codes for that device, depending on what special capabilities it has. Perhaps now the user can see why there are so many different printer drivers on the extras disk.

Using a modem to communicate with another computer over the phone, is similar to two people using an international language, that is to say, the computers may be of different makes but the language is the same. Files may be sent from one computer to another, and if an ASCII text file is sent from a computer, the text can be displayed directly on to the screen or stored in a file regardless of what type of computer received the file.

Binary files can also be sent by modem, but if the file is a program specific to a particular type of computer, only computers of the same make or type could run the program. All the files on the FREE-DISK are available from different bulletin boards, but they are only a fraction of what is available.

The user with a modem can access a bulletin board and down-load any other files they wish. If you are thinking of buying a modem, there is a communication program on the free-disk for you to use.

The word modem is made up from two words, modulator demodulator, for the novice all this means is, the OUTPUT from the modem has been turned into sound pulses and sent down the phone line, while the INPUT as received by the modem is demodulated back into computer language.

The table listed below is the ASCII equivalents to the most commonly used alphanumeric characters.

character	ASCII value	character	ASCII value
0	48		91
1	49	<	92
2	50		93
3	51	-	95
4	52	'	96
5	53	a	97
6	54	b	98
7	55	c	99
8	56	b	100
9	57	e	101
:	58	f	102
;	59	g	103
<	60	h	104
=	61	i	105
>	62	j	106
?	63	k	107
@	64	l	108
A	65	m	109
B	66	n	110
C	67	o	111
D	68	p	112
E	69	q	113
F	70	r	114
G	71	s	115
H	72	t	116
I	73	u	117
J	74	v	118
K	75	w	119
L	76	x	120
M	77	y	121
N	78	z	122
O	79	{	123
P	80	|	124
Q	81	}	125
R	82	~	126
S	83		
T	84		
U	85		
V	86		
W	87		
X	88		
Y	89		
Z	90		

MIDI-X2

THE MUSICAL INSTRUMENTS DIGITAL INTERFACE

MIDI-X2 is an interface that you need to link, your MIDI-equipped musical instruments and controllers, to your AMIGA. It is compatible with all music softwares that recognizes MIDI. Though it is designed for the AMIGA 500/2000 computers, it can also be interfaced with the AMIGA 1000, by using just a jumper-type gender changer without added electronic components.

Since the MIDI-X2 utilizes the AMIGAs serial port, it is therefore still possible to connect any other serial devices such as a printer, by connecting the device to the 'pass thru' on your MIDI-X2. This special feature will be useful and convenient, when you need to print a score or sequencer data in the midst of your music work.

To handle the MIDI data more efficiently, we have employed a digital opto-isolator in the MIDI-X2, rather than the conventional analog one like most other MIDIs with similar features

We believe that MIDI-X2 will give you a better link to your music.

MIDI-XPLUS

A MIDI INTERFACE PLUS HI-SPEED SAMPLER

MIDI-XPLUS is a two-in-one interface device which share a common theme — MUSIC. It is a MIDI interface as well as a Sound Sampler.

The MIDI Interface is what you need to link your MIDI-equipped musical instruments and controllers to your AMIGA. Though it was designed for the AMIGA 500/2000 computers, it can also be interfaced with the AMIGA 1000, by using just a jumper-type gender changer, without added electronic components. To handle the MIDI data more efficiently, we have employed a digital opto isolator for the job rather than the conventional analog one like in most other MIDI interfaces.

After fully wiring-up your MIDI gear, you may require to utilize the AMIGA sound chip to create your own brand of sound. MIDI-XPLUS is simply ready for sampling.

Just plug your audio-line output into the audio input on your MIDI-XPLUS and all the adjustments are done automatically.

You need not worry about missing any details of your sound. This is because the MIDI-XPLUS has an internal sampling rate of 100kHz, which will capture those details faithfully, provided your sampling software does its part.

So if you have a good source, MIDI-XPLUS will promise you a good sample and then when you need this sample 'MIDIed', the answer is conveniently near.

MIDI-MATRIX

A SMART MIDI PATCH BAY

The Commodore AMIGA is a computer with superb graphic and sound capabilities, compared to all other computers in the same range. When it was first released, it answered the dreams of creative people. But one question still remains — "Why is there no MIDI?" One could say that Commodore had been farsighted on the onset and had left the option open.

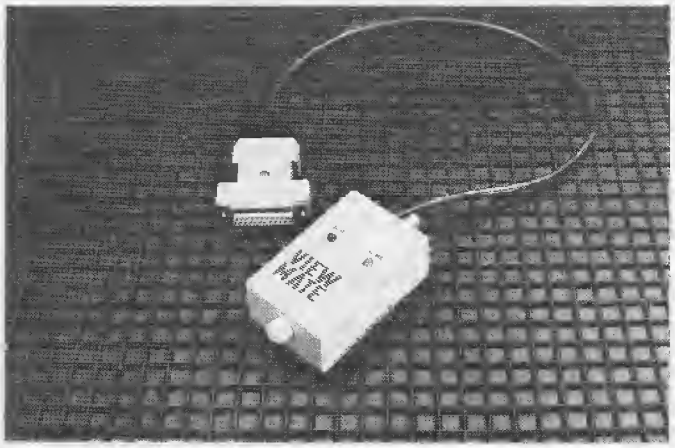
This has led to the birth of the MIDI-MATRIX. It's birth has put an end to the search for extra output or thru port and even disconnecting and connecting MIDI cables during studio recordings or live performances, to accomodate different set-ups.

With MIDI-MATRIX, the solution is reached by pushing just a single, or a number of buttons whereby you can assign any input to your AMIGA or bypass it. You can also assign any output to your AMIGA or assign it as a thru port. You can figure out your MIDI cabling set-up at a single glance.

DIGITAL-X would like to see you do less cabling work and more music, with the help of MIDI-MATRIX.

VIEWMATE

AN RGB-CVBS SWITCHER



The ViewMate is a solution. It is a peripheral that most Commodore 1081 and 1084 monitor owners have desired, for a long time.

It makes monitoring whilst digitizing or viewing your video player, an absolute ease. There will be no more groping behind the monitor to unplug and plug connectors, nor switching off the computer just to monitor an external video source.

To set up the ViewMate, unplug the monitor's RGB connector from the computer, and plug it into ViewMate's 23-pin male connector. Now plug the ViewMate's 23-pin female connector, into the computer's RGB port. This will be your permanent set-up.

Operating the ViewMate is even simpler. To view an external video source, simply connect the source to the RCA-connector of your ViewMate. Then switch to CVBS on your monitor and Viewmate.

The ViewMate's LED indicators will hilite whichever mode you are in. Now, monitoring can be painless... with ViewMate

DIGITAL-X (AUSTRALIA)

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Form of an Elephant ... - emulating other operating systems

by Andrew Farrell

GIFTED AS THE Amiga is, there comes a time when reading data from another operating system's disk format or actually running software intended for a different make of computer can be useful. The Amiga 2000 is now uniquely positioned to operate the other major two operating systems - MS-DOS and Apple Macintosh - with a degree of success and compatibility which makes the trouble well worth the results.

Emulation is no simple matter. At the heart of the problem is the microprocessor. This somewhat largish silicon chip speaks a language all of its own. Different microprocessors have little or nothing in common so far as compatibility. Today there are two main worlds - Intel's 8088, 8086, 80286 and 80386 form one group and the Motorola 68000, 68010, 68020 and 68030 forms the other. Intel is the brand of processor you'll see under the bonnet of MS-DOS compatible machines. The Motorola 68000 series is used by the graphic oriented machines - namely the Atari 20ST, 1040 and beyond, the Apple Macintosh Plus, Mac IIc and related models and the Amiga 500, 1000 and 2000.

So, the first trick involved in emulating software written for a particular microprocessor is to make sure you have access to the processor in question. Commodore tried to emulate the IBM PC purely by software. The result is floating around many public domain collections and Bulletin Boards. It will run *dBase* and other popular DOS programs. However, it is very slow and somewhat unstable in operation. Software emulation of a different processor to the one fitted is therefore possible, but not practical.

The next hurdle is the actual operating system software. Whilst MS-DOS is loaded from disk, working with a very small ROM based segment of program, other systems have a much higher overhead of proprietary operating system resident in ROM. This presents some problems from a legal point of view. Nevertheless, at the moment, this has in no way hindered availability of systems requiring the ROM based program code.

Let's take a look at the two real emulators in the Amiga market. That means none of the C64 emulators are in the running - they're slow, incompatible, and uneconomical. Keep your C64, or buy a cheap secondhand model. For reading files try DISK-2-DISK or as we use here, a direct null-RS-232 cable.

MS-DOS and the Commodore Bridgeboard

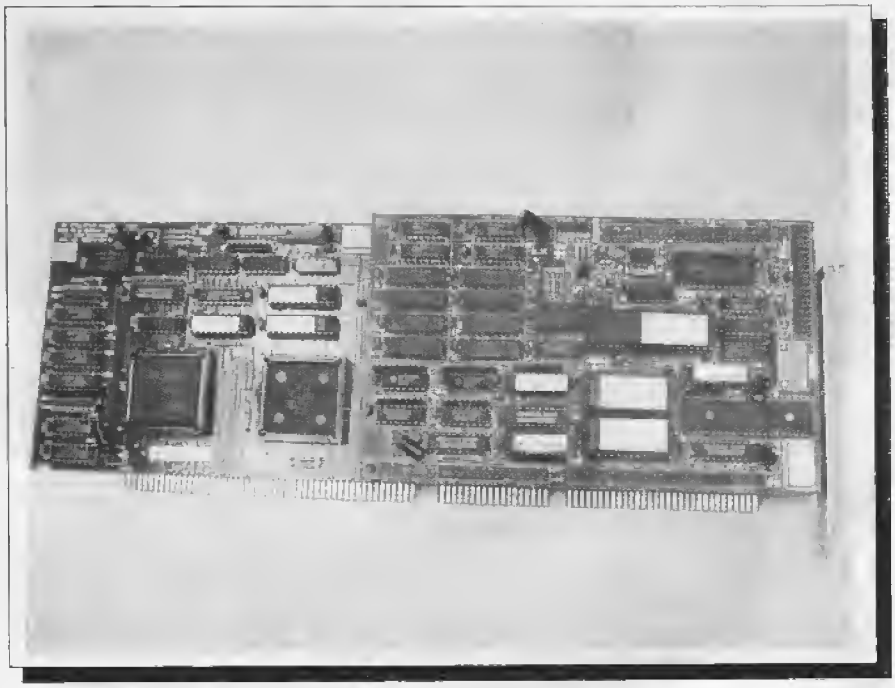
● It is a sad thing that MS-DOS machines have been projected so heavily into the home market of late. As a serious business machine, they do a fine job, but for home use there is little value in having MS-DOS compatibility. Amiga is clearly a far more exciting machine. Some businesses have accepted the challenge of putting the Amiga to serious work.

For such a business wishing to exchange files with clients, place Postscript output onto MS-DOS format for printing at a Linotronic bureau or run an application only available in MS-DOS format, the Commodore A2286 Bridgeboard is ideal. You will need an Amiga 2000 - a hard drive is also recommended.

I had the distinct displeasure of using one of the very early XT Bridgeboards. It over-heated, was slow and unreliable. The new AT Bridgeboard has changed all that. My currently installed board has worked trouble free for some time.

In essence, the Bridgeboard is an IBM AT on a single board. The 80286 processor along with 1 Megabyte of RAM is included. The A2286 is very tightly packed - and is also fitted with an additional daughter board at one end.

Installation is normally carried out by your local dealer or Commodore. However, if you have to carry out any of the procedure yourself, the manuals explain the



Commodore A2286 bridgeboard

various steps reasonably well. Since the board straddles three slots in the Amiga 2000, it requires quite some force to be pressed into place. Be sure to apply this evenly across the entire length. Removal is equally difficult, and best done with two hands placed at opposite ends of the board - gradually apply force until the board is free.

The interface between the Bridgeboard and the Amiga is handled by software known as *Janus*. Version 2.0 provides a number of new features including the ability to use the Amiga mouse in the MS-DOS environment. Installing *Janus* and the related font and driver is very simple. A small program on the installation disk handles the process, and even works out which files should be removed from a device if it decides more space is required.

Once everything is installed, including the 5 1/4" disk drive, you're ready to start emulating at the click of a mouse. The Bridgeboard starts up as soon as you switch on the Amiga. Double clicking on either the colour or mono emulator icon opens a window into the Bridgeboard. From there you can run probably any DOS application without any fear of compatibility problems. The standard display produced by *Janus* is equivalent to a CGA card.

If you require higher resolution screens, you will need to purchase a separate display card and slot it into one of the several spare PC slots. A preferences setting in the PC drawer enables you to activate the new display card. If you plan on doing a lot of work on the PC, I would strongly suggest you purchase a display card, and a separate monitor. Although the Amiga's PC window works well, it is a little slow with some applications. Text scrolling, although vastly improved over the earlier model, is still a little jumpy.

Other standard IBM cards may be connected too. For serious work, a hard card is a good idea. Or you can use an Amiga drive to contain a file which emulates a PC drive. If you have an Amiga hard drive already mounted, the MAKEAB program will create a pseudo PC hard drive in whatever partition you desire, to any required size. The usual DISK and FORMAT commands are then used from MS-DOS to format the pseudo drive.

This arrangement is suitable for the casual DOS user. However, once again, intensive DOS user may find due to the path information must take across the Amiga BUS, access speeds on the pseudo hard drive can be slow.

Janus enables the Amiga's parallel port to be used by MS-DOS, however there is no support for serial communications. A separate slot-in serial board would be required.

Files may be transferred between AmigaDOS and MS-DOS using AREAD and AWRITE. Allowance is made for binary and text files, with translation of ASCII codes where appropriate. I have used these commands often, and find they work well. The Software Guide in this Annual was originally entered on an IBM PC using *dBase*. Later the entire 500K file was transferred by direct cable to an Amiga - a process which took about twenty minutes. It then went within the Amiga to MS-DOS by the Bridgeboard in under 30 seconds, where the transfer was checked using a *dBase* compatible package and then loaded into *SuperBase* where the guide now resides.

Overall, the AT Bridgeboard is a useful supplement to the Amiga. It is not a replacement for a fully fledged AT. However, for the casual DOS user it will do the job without too many hitches. If you're not at home connecting cards and cables, get an experienced user or your dealer to install the board and software. Recommended retail price on the AT emulator, the A2286 Bridgeboard, is $1500 including the 1.2 megabyte 5 1/4" drive.

Macintosh and the AMAX Emulator

● At the hardware level, an Apple Macintosh and the Commodore Amiga have a lot in common. Both use the powerful Motorola 68000 microprocessor. Both are graphic based, and rely on various custom chips to achieve higher processor throughput. Both use the 3 1/2 inch disk standard.

AMAX is produced by ReadySoft, already famous for the entertainment program that won the hearts of animation enthusiasts, *Dragon's Lair*. They have also produced an emulator for Commodore 64 fans who have upgraded to the Amiga. After receiving my review copy, I was eager to lay hands on a set of 128K Apple Macintosh ROMs.

Yes, you do need those ROMs. How you get them is your business. Readysoft kindly include a list of possible suppliers in the United States. Closer to home, several importers of the

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product are selling the AMAX emulator optionally equipped with the required Apple firmware. The ROMs are not officially available separately through any local dealer I spoke to.

Once you have the ROMs in place, the next essential step is to grab a fist full of good Macintosh software. The simplest way is to borrow a Mac drive from a riend, or if you plan on regularly transferring files to and from true Mac format disks, purchase your own Mac drive.

One drive which I have found to be both reliable and good value for money at around $299, is manufactured locally by Computer Discounts. You'll find them at 19-21 Buckland St, Broadway or on (02) 281 7411. You can also purchase AMAX with or without Apple ROMs from the same location.

Once you have a Mac drive, connect it directly to the AMAX interface, which plugs into the Amiga's disk drive port, and you then directly transfer software from Mac format to the AMAX format. The reason Amiga drives cannot be made to read Mac disks is due to a variation in the drive mechanism. Mac drives use a variable speed interface, whereas the Amiga uses a constant speed.

All the necessary hardware should cost you under $70. Add the cost of a 1 Megabyte Amiga 500 ($1300) with monitor ($500) and an external disk drive ($250) and you have one very inexpensive equivalent to a MacPlus. The best part is, in some operations the Amiga is faster.

AMAX Macintosh emulator

Using an Amiga 2000, with the right accelerator board, you start to exceed the speed of a Mac II, for far less outlay.

How well does AMAX work?

● Everything I tried worked ... eventually. There were a few glitches along the way. Appletalk is not supported yet. Neither are Amiga hard drives, so the system does have a few limitations. But you can work around these. Postscript files from Pagemaker must be printed to a file, and then you use a utility supplied by Readysoft called File Dump to get hard copy.

Programs which work with the Imagewriter will operate fine by means of the Amiga's parallel port. Serial communication is also diverted to the Amiga serial port.

The screen display is probably the most flexible aspect of the AMAX system. Depending on what Amiga hardware you have, better results can be achieved. Starting from a small MacPlus type screen up to a full 1024 x 800 display using the new A2024 Commodore monitor. The enhanced chip set will also help you obtain a crisper display of the Mac's somewhat more elegant work environment.

However, there were some aspects of the Mac I immediately disliked that I had almost forgotten about. Who ever heard of waiting for a disk to format, or files to copy. I have grown so used to those things happening as background tasks that at times using the Mac was like working with one hand tied behind my back.

One whiff of *Hypercard, RSG 4.5* and *MS-Word* soon fixed that. There are some fine packages out there that work well on the emulator. Most productivity programs will run. MIDI applications and some games or graphics software will not, depending on the use of directly addressed graphics and bypassing of the standard Apple ROM calls.

For the office worker who uses a Mac by day and an Amiga by night, the possibility of taking work home opens up. Businesses trying to save a few dollars may well consider a combination of the Amiga 2000, with a Mac emulator, a sound investment covering all potential requirements of a PC in any business.

Of course, for home hobbyist types, it is all just one more flag to wave in the green faces of visitors who are regular hacks of other lesser brands. Amiga has done it again, proving the flexibility of the hardware that was almost only a games machine.

It would be a mistake to forget the Amiga completely. Some have opted for the Mac as a desktop publishing machine by means of the Mac emulator. One user I spoke to did so before even looking at products such as *Professional Page* or *City Desk 52.0*. At least do the Amiga justice and make sure it can't already do the job. For serious work, the multi-tasking environment is much better than anything MS-DOS or Macintosh can perform. Stick with it and as the software continues to improve as it has already done, you'll be riding the crest of the Amiga wave. ❑

Housekeeping for Amiga users

by Andrew Farrell

EVERY SO OFTEN we come across a utility that after a short period of use we just can't do without. *Diskmaster* is one such program. I have not seen a better program on any other brand of computer. *Diskmaster* is a dream to use.

Once activated, *Diskmaster* opens a new screen, which is divided into two areas, each of which can display a directory from any device.

Down the centre of the screen are a whole host of gadgets, and there is also a swag of pull down menus. The gadgets include the device name of each drive connected to your Amiga. To choose a drive, you click on the corresponding gadget and the root directory of the mounted disk immediately appears.

The information included about each file listed is much the same as what appears using the list command from the CLI; file size, creation date and protection status. Using Workbench, this information is normally only available using the INFO menu option.

At this point I should explain to non-CLI versed Amiga users that a directory is pretty much the same as a drawer on your Workbench. Of course, not all directories have corresponding drawers. Many files on your disks cannot be seen or accessed using the Workbench. With a program like *Diskmaster* you can access these files with the ease of using Workbench, but with the power of using the CLI.

For file copying it is a simple matter of selecting the two devices to copy from and to respectively. Once the directory of each disk is displayed, you move into sub-directories by clicking on the directory name. Once each disk is correctly positioned, the files to be copied are highlighted using the mouse, you then click on the COPY gadget.

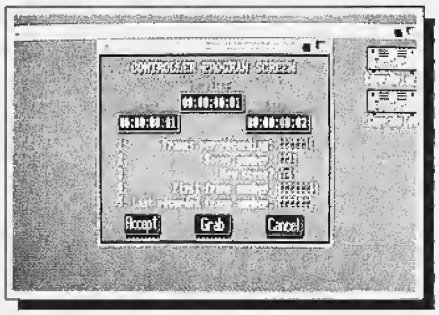
Files may be moved, deleted, renamed, protected, commentedor searched in a similar fashion. It is also possible to view a picture, play a sound sample or read a text file all using the same file selection and gadget choice arrangement. This is an extremely useful feature.

New directories can be created and old ones deleted. *Diskmaster* is especially useful for cleaning up an over-crowded Workbench disk. The program is just over 60K in size, and with a little effort can be made to fit on most Workbench disks that have been stripped of non essential files. My startup-sequence runs *Diskmaster* every time I switch on my Amiga. From the pull-down menus you can format a disk, copy an entire disk, extract ARCed or ZOOed files, or ARC a group of files. You can even customise *Diskmaster* to include a gadget for just about any command you could normally enter using the CLI.

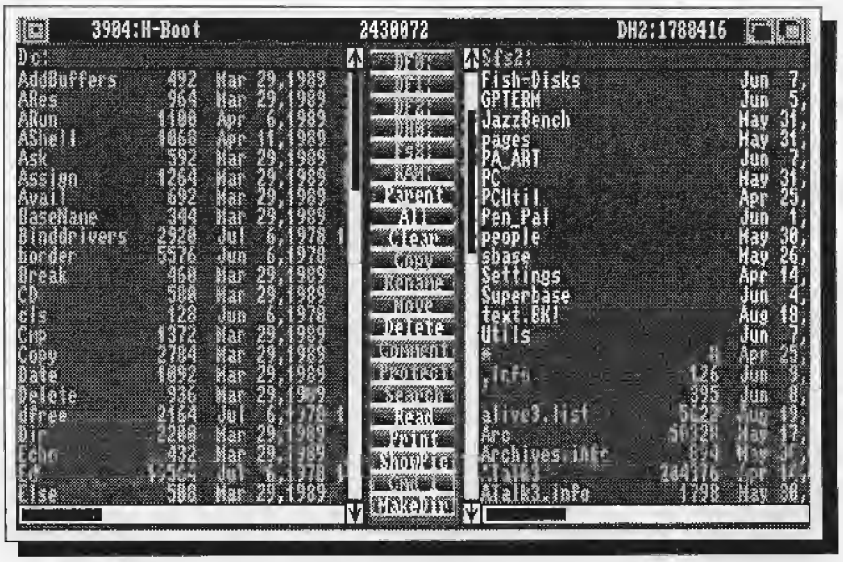
The entire display works in several resolutions, and character widths. *Diskmaster* has its own configuration files for colours and other settings. You can also view the date, time and free chip and fast memory. Sitting on its own screen means you can click the front to back gadget and hide *Diskmaster* behind your Workbench.

Unfortunately the hidden screen can be very memory hungry, especially as it tends to switch into interlace mode if you run another interlace mode screen. This consumes vast amounts of CHIP memory and often results in an out of CHIP RAM error from packages such as *Professional Page*. The solution is to close down *Diskmaster*. By placing *Diskmaster* in your RAM disk, reactivating the program is not a tedious business.

Diskmaster is a must for all serious users. The program sells for around $70. You can buy your own legal copy from most Commodore dealers. ❑



Workbench



Diskmaster

A Hitch-Hiker's Guide To Amiga Communications

by Bernard de Broglio

COMPUTERS ARE TO be found dotted all over the globe. By linking your computer to the local telephone exchange, you too can venture forth onto this electronic network. Pack your bags - it's time to travel.

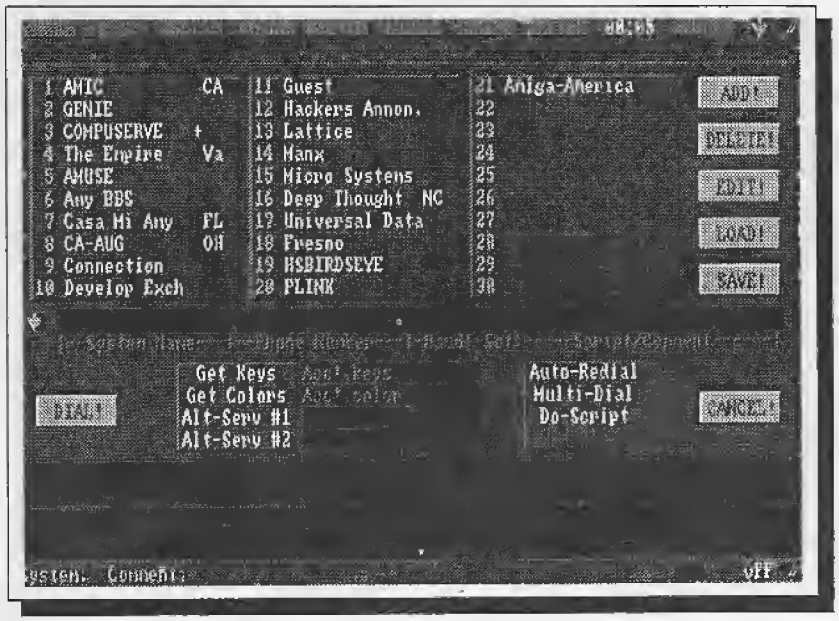
Your first requirement is that piece of hardware known as a 'modem', a smallish box which allows the computer to make sense of the telephone system. When your computer shoots information down the line, the modem must first MOdulate it into a form the telephone can comprehend. At the other end of the line, the high-pitched squeal is DEModulated. The 'mo-dem' converts a digital signal to analog and back again.

Installing a modem is not complicated. An RS232 cable links the unit to the Amiga, and it generally has its own power supply. A cable connects the modem to a standard telephone socket.

Although the principle remains unchanged, there is a great variety in the modems for sale. These revolve principally around the speed at which the unit communicates. A modem's pace is calculated by the number of 'bits per second' (bps) it can pump down the telephone line. This is also known, somewhat loosely, as the baud rate. This year, 2400 bps is the go. Computer users have speed as their holy grail, and most are holding out for, or already have, modems that can handle 9600 bps. At the moment, these turbo models are very expensive, but expect to see them as standard equipment within a couple of years. For now, 2400 bps modems are available at a reasonable price.

Your need for speed will depend very much on your individual requirements. If you frequently dial overseas systems, the additional cost of a 9600 modem would be justified by the savings on IDD charges. At the moment, few Australian systems support this baud rate.

Just to muddy the waters, there are two standards at work in the modem world for units at 300 and 1200 bps. These are 'CCITT' (which is recognised world-wide) and 'Bell' (applicable only to the United States). If you purchase a modem at 300 or 1200 bps, keep this in mind. There are no such differences amongst modems at 2400 bps and over.



Access

A fellow traveller

● An Australian-made modem is your best buy. Not only are you giving the local economy a boost, but you'll find yourself with a warranty and a company that knows what it is talking about. If you run into problems, this support will prove invaluable.

Second-hand units at 300 and 1200 baud are often advertised for sale. Think carefully of the restrictions of such baud rates and enquire most diligently about compatibility with your computer. You may regret the cheaper modem when it doesn't respect your software in the morning. Organise a test-run if possible.

As with much computer hardware, newer is better. Netcomm have an extensive range, which includes the popular Pocket Modem. Avtek Data Communications have the MegaModems in several different configurations.

The Maestro 2400 ZXR and XR

● Maestro produces modems of Australian design and manufacture. More importantly, its product is first class. The 2400 ZXR modem has the lot for about $399. It will handle 300, 1200/75, 1200 and 2400 baud, with auto-answer and auto-dial. It is compatible with the industry standard Hayes 'AT' command set, but if this means nothing to you, don't worry. This standard will ensure that you never have to learn about it. The Maestro handles both tone and pulse dialing.

For around $100 less, the Maestro 2400 XR is the same basic unit, but supporting only 1200 and 2400 baud. Remember, Viatel requires 1200/75. If you never intend to use Viatel, this is not a problem. Both modems are a breeze to set-up. They are sturdy and reliable, and are backed up by a ninety days warranty. Coloured basic black, the modems are roughly the size of a large hardback novel. My only criticism lies with the manual. It is not particularly helpful for the new user.

Maestro Pty Ltd may be reached at Calool Street, South Kincumber NSW 2256. The Maestro ZXR and XR are highly recommended.

Terminal software - into the driver's seat

● A modem without terminal software is about as useful as an aeroplane with its pilot on strike. The modem, you will remember, simply modulates the computer's digital output to an audio signal for use on the telephone line. How this information is interpreted and displayed depends largely on the terminal software that drives the modem.

A host of such programs are available on the Amiga, and they vary enormously in quality. Amongst the commercial products, *GP-Term* is recommended. This terminal program will cater for every situation, whether it be Bulletin Boards or videotext systems such as Viatel (more on Viatel later). *GP- Term* supports all baud rates and most protocols, including Punter, Sealink and Zmodem protocols. That it is written by two Australians, Greg Perry and Steve MacNamee, is a good thing. *GP-Term* retails at around $99 and is available from GP Software, 21 Aloomba Road, Ashgrove Qld 4060. Tel. (07) 366-1402.

Shareware software is freely available and often of the highest quality. This is evidenced by *Access!* and *JR-Comm*. *Access!* is an elegantly designed program which compensates for its lack of features with a friendly user-interface. *Access!* is simple to configure and uncluttered in appearance. The icons at top and bottom of the screen are a pleasing touch. The main criticism of *Access!* is that it supports very few protocols. (Protocols will be explained a little later.) Only Xmodem and WXmodem are available at the moment. *Access!* may be downloaded from most Amiga systems. It is a smooth introduction to communications.

JR-Comm

● Jack Radigan is the author of the exceptional *JR-Comm* and the doyen of the terminal software scene. For the moment, at least. Things move quickly in computer circles.

JR-Comm fairly bristles with features. Let's whip through the most important. *JR-Comm* supports Australian PAL screens, interlace and overscan, most protocols (including Zmodem but not Sealink), almost 100% IBM ANSI terminal emulation and a very intelligent phone directory. There is also a printer function, a session log (keep tabs on your calls), review and capture buffers, function key macros and a chat mode, all available in up to 16 colours. These are fine credentials for a program that is free to download and use (although a shareware contribution to the author is encouraged!).

JR-Comm matches the commercial products and gains a slight edge with its simplicity of operation and careful presentation. The documentation is clearly written and I have not encountered any problems with the program despite almost daily use. Jack Radigan may be contacted personally through the International Amiga Echo. It is not often that users have a direct link to the programmer of their software. *JR-Comm 0.94a* is the most recent version of this program, and may be found on many systems. For version 1.0, now under development, Jack Radigan asks of Australian users a registration fee of US $40.00. *JR- Comm 1.0* will eventually be released as shareware, but registered users will benefit by receiving their updates well in advance.

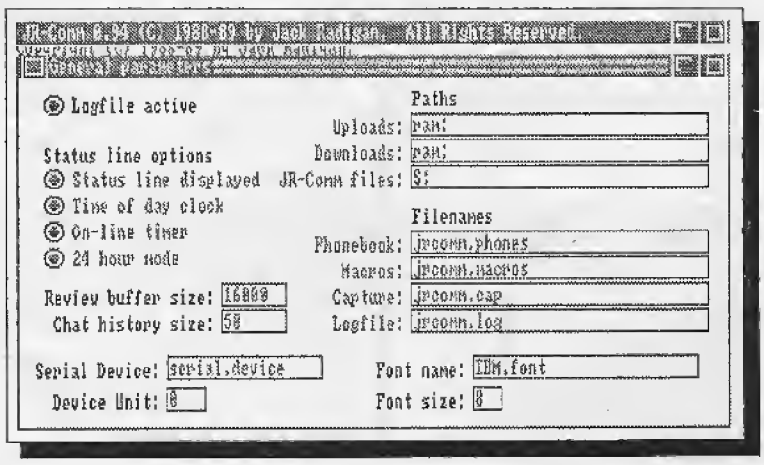
Have modem, will travel

● The modem is plugged in, the software is talking to the hardware and all LED's are glowing in anticipation. What now?

Your first call will probably be to a local system known as a 'Bulletin Board'. A Bulletin Board is simply another computer linked to a telephone line, equipped with the appropriate software. It will allow you to leave and receive messages and to upload and download software. Think of it, perhaps, as the local pub - all through the day and night, people will call in to the Bulletin Board System (BBS), writing and replying to messages, discussing everything from Abba to Zulu rituals and back. Fortunately, your local BBS is not restricted by licensing laws...

And how do you get into the BBS? Simply dial its phone number. (The newer 'smart' modems will ring the number for you, when you double click on the BBS listing in your 'phone directory'. This is called auto-dial and it is infinitely preferable. Older modems may require you to dial the number manually.) The BBS will answer your call and emit a high-pitched squeal. This is the 'carrier', the signal which transmits the information to and from the BBS. The modem will make sense of this and after a brief pause, will display the system's log- on message. Hopefully. If there's garbage on your monitor, make sure that your terminal and the BBS are communicating at the same baud rate, and that the following are set correctly: most Bulletin Boards work on 8 Data Bits, No Parity and 1 Stop Bit. You could even read the manual.

The Bulletin Board will now want to know who has called. You will be asked to input your name or user identification number. If you have called before, a password may also be required. New users are generally asked to fill in a questionnaire, giving their name and address, and must choose a password. The System Operator(s) will treat this information as confidential, but discretion may be in order. Both users and SysOps must be protected from each other! (A word of warning. Treat your password as you would your bank PIN number. Give it to no-one and change it regularly.)



JR-Comm - Power over settings

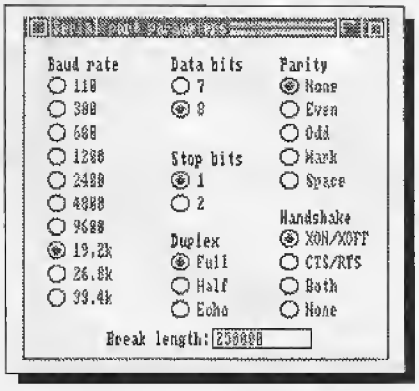
Your access to a Bulletin Board will vary from place to place. On some, there is a membership fee to pay. On others, there are certain areas restricted for regular users or specific clubs. Of course, Telecom will also charge you for the cost of your call. In almost every case, the BBS will be run by a private individual or two, at their own expense. Membership fees may help to defray the cost of equipment, but very few systems operate at a profit. Your generosity will be appreciated.

That is not to say, however, that Bulletin Boards are amateurish affairs. On the contrary, many are of exceptional quality. The Australian Bulletin Board Registry compiles regular lists of these on-line systems. According to the latest listing, there are some 363 Bulletin Boards in Australia alone.

TeleInfo Systems Australia

● Exploring the BBS network will be your first task! But what exactly does a Bulletin Board offer? Let's take a ride through Sydney's 'TeleInfo Systems Australia' BBS:

TeleInfo is a 6 line Bulletin Board based in Sydney. It provides a wealth of message areas and public domain software, and an interesting concept known as 'Chat'. The local message areas of this BBS include a Discussion and Media Watch section, complemented by SIG's (Special Interest Groups) for Amiga and Apple users. There are also a number of 'Echomail' conferences. The notion of Echomail will be introduced shortly, but suffice it to say that this BBS offers a number of national conferences, such as the Australian Trading Post, Science, Games and Amiga Echoes. International conferences include the Amiga, Space, CD-ROM, Audio, C, Humor and Shortwave Radio Echoes.



JR-Comm - Serial parameters

You will get to know the terms 'uploading' and 'downloading' well. Most Bulletin Boards have a files section, from which a program may be transferred - over the telephone line - to your computer. This is downloading. Most Bulletin Boards also like you to submit programs for the file section and the benefit of other users. When you transfer a file to a BBS, you are uploading.

The Amiga files section on TeleInfo is exceptional. The expansive range of programs caters for most aspects of Amiga computing, with sections on utilities, video, sound, games and communications. Recently, I have downloaded Mike Hansell's latest virus killer and updated versions of DiskSalv and SoundTracker. TeleInfo is also a good source for terminal software and utilities. *JR-Comm 0.94a* and *Access!* were available here shortly after their release. Naturally, all programs for download are shareware or in the Public Domain. A valuable resource for all Amiga users.

An alternative to messaging other users is 'Chat', a real-time conversation between any or all of the callers logged-on to a Board. On TeleInfo, the 'Chat' area is called the 'CB Simulator'. In this conference, what you type is sent to each other person in the CB Simulator, preceded by your name and line number. What follows is similar to normal conversation, but not quite. If the BBS is akin to a pub, then the CB Simulator is the bar. Discussion can be lively and the puns grotesque! 'Chat' is a relatively recent innovation and should be experienced.

TeleInfo Systems Australia is a big BBS with plenty of activity. The six lines are appreciated, but it remains busy in the evenings. A membership fee of $25 a year gives full access to the system and a more generous time limit. Visitors have 30 minutes per call and 60 minutes per day on the Board, with no access to the files section. TeleInfo supports all baud rates up to 2400. Call TISA on (02) 975 1099.

Treading the boards

● Prophet TBBS is primarily an IBM oriented Bulletin Board, but it has a great cross-section of message areas. Prophet, like TeleInfo, has a Chat facility, called Yakety-Yak. Multi-line systems are becoming a little more frequent now. Prophet was one of the first. It has 6 lines and a 30 minute call limit, ensuring a brisk traffic throughout the day. Prophet BBS may be reached on (02) 628-5222. "As far as privately operated, free-access systems go," says Andrew Farrell, "this is one of the best".

Paragon is another Sydney BBS, recommended primarily for the quality of its message base. The local discussion is always lively and the users make an effort to post creative messages. Paragon charges no membership fee. It may be reached on (02) 597-7477.

Amiga users might like to try Adam BBS, a Board that promises 1.4 Gigabytes of Hard Drive storage! Call Adam on (08) 370-5775. You're likely to find on-line games, such as *Dungeons and Dragons*, *Diplomacy* and even *Chess*, on most systems. Ask the SysOp for details on joining a game. Instructions should be available on the Bulletin Board. But any opinion of individual systems is going to be subjective. What is certain is that you will find a BBS that serves your interests.

A jaunt in the country

● Australia's national videotex service is Viatel. It is this system that will provide you with telebanking, telebroking, teleshopping and on-line TAB details. This sounds like everything you might need, but there are two drawbacks to consider.

The first is that Viatel is not cheap. A monthly subscription for a non-business user is $3.50. You will, of course, pay the cost of a local call for each log-on, as well as a time charge. Viatel costs 9 cents a minute during peak hours. At other times, expect to pay 6 cents a minute. You may also have to accept a frame charge for some areas. The frame charge can be anything up to $4.99.

The second complaint is subjective. While the concept of electronic news digests, information databases and travel information sounds good, there isn't all that much purpose. A copy of the daily newspaper, for example, is cheaper, more informative and easily portable. However, telebanking - shunting money around your bank accounts - is popular and many people have sworn by telebroking. Amiga users are better served by any of a number of Bulletin Boards that support this computer. For further information on Viatel, write to Freepost 20, Viatel, G.P.O. Box 188C, Melbourne Victoria 3001.

The world - on 21c a day

● Hopefully, you've enjoyed these escapades, but your horizons have been broadened. It's time to go beyond these

shores. Let's see how Australia fits into the world-wide scene.

Connecting Bulletin Board Systems all over the globe is FidoNet, the very first international BBS Network. FidoNet had its beginnings in May 1984. Two American programmers, Tom Jennings and John Madill, were coding a Fido BBS system, and thought it might be helpful if two Bulletin Boards could contact each other without any human interference, preferably in the early hours of the morning when the System Operators (SysOps) were asleep and few users were calling in. By February 1985, the Fido network consisted of 160 systems. Today, a greater part of the world is linked to FidoNet. An Australian - Matt Whelan - is the International Coordinator.

To give you an idea of the breadth of this network, consider how FidoNet is organised: There are four main geographical Zones - North America, Europe, Oceania and South America - which are divided further into Nets. Each Net consists of a number of individual Bulletin Boards, called Nodes. Each BBS in the FidoNet system thus has an 'address'. Take for example 'Paragon' BBS which has a FidoNet address of 3:712/502. The first digit stands for the Zone. Oceania is Zone 3. The following three numbers specify the Net within the Oceania Zone. Net 712 has been allocated as 'Sydney Net'. The final three digits specify the exact BBS within the 'Sydney Net' area. Node 502 is 'Paragon' BBS. Where a BBS is not linked to a network, the non-existent Net number is replaced by a two digit Region number.

A Node may also be accessed by Points. A Point is usually an individual system, almost a one person BBS. If you become addicted to FidoNet messaging, this may be an option. Your computer will be set-up to dial the 'Server' Node at the usual ungodly time, and to transmit and receive parcels of mail. This can then be looked over at your leisure. Points are becoming more popular, but are not yet a viable option for most BBSers. Someone 'pointing' from 'Paragon' BBS might have an address of 3:712/502.1.

Throughout this spider's web of Bulletin Boards, messages are being distributed along every strand. Messages may range from a brief greeting to a lengthy discourse on the merits of mushroom farming, but they are similarly treated. Keep in mind, though, that this service is freely offered by publicly-minded SysOps! In the early hours of the morning, the day's messages on a system are parceled together and compressed. Hundreds of Bulletin Boards around the world toss their packets of mail from Zone to Zone. Gareth Powell, editor of the *Sydney Morning Herald's* computer section, calls this "one of the most amazing non-commercial computer systems in the world". From a Node or single BBS, your message travels to the Network Co- ordinator of your area. The Network Co-ordinator will automatically route the public message to all the Nodes in its net and the private mail directly to the Node for which it is intended. People will receive your letter within a day or two. Simple!

But it is high time to distinguish between two types of mail: netmail and echomail. Netmail is intended for private communication only. SysOps prefer that general conversation be left in public message areas, to stimulate conversation, but if it's Top Secret, send it Netmail. Only the SysOp will be able to read it and a SysOp's discretion is legendary. Like any other letter, don't forget to include the correct FidoNet address.

Echomail is what Bulletin Boards are all about. Imagine message areas set aside for particular topics, accessible by thousands of computer users on the Fido network. How does this work? A group of Bulletin Board Systems will decide upon a 'conference' with a given theme. This does not always have to do with computers. Each Bulletin Board in the group will have a message base set aside for this particular topic. Every message posted on one board is then echoed to every other BBS that is part of the conference.

Consider, if you will, the International Amiga Echo. You can post a message in this area on a Bulletin Board System in Perth. Within days, it will find its way to every other BBS that supports the conference. Your query might find its reply in California. Log-on to your local Bulletin Board and collect your international mail - for the cost of a normal call.

Echomail provides an immense information base on subjects ranging from Recipes to Shortwave Radio. Not only is it educational, but it can also be fun. The Canada-Australia Echo is one example. This has been set up specifically to provide con-

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tact between people in these two countries. Scandinavia has also tapped into the conference. Look to this Echo for friendly international chat. The Space Echo is patronised by NASA personnel and space enthusiasts alike. The content is occasionally specialised, but rarely dull. From NASA headquarters in Washington come daily bulletins and news releases, with details of shuttle launches and other missions. Keep an eye on American and Soviet space agencies and enjoy the immediacy of international communications!

In the United States, there are some 50 Bulletin Boards that support self-help groups such as Alcoholics Anonymous. Callers have access to an on-line collection of A.A. 'recovery advice' and their own message base. The anonymity of a Bulletin Board is helpful for people who may be reticent about attending a meeting. The act of writing the message may itself be a cathartic experience, and the response is likely to be encouraging and understanding. Such message bases are a vital link for people in rural communities.

Amiga users are particularly well served by Echomail. There are international conferences in Amiga music, video, pointing and programming, as well as several Australian conferences. The quantity of on-line information is staggering. You may also like to read one of the weekly issues of FidoNews. They are very dry but an interesting insight to the organisation. Ask your local FidoNet SysOp where you can access these files.

Don't forget to pack...

● With the amount of mail and software circulating through the BBS network, it is essential to know the basics of 'archives'.

As you will have noticed on the Workbench disk, a program often comprises of several individual files. For instance, take the speech program called 'Say'. For this program to operate, it requires the following files: Say, Say.info, translator.library, speak.handler and narrator.device. To upload the 'Say' program to a BBS would appear a time-consuming task. Not so, for we have the assistance of several archiving programs on the Amiga.

Arc is one of these common utilities. Arc will combine the five files we have listed into just one: 'Speech.arc' for example. The final three letters will specify to all users that the file must be 'unarced' to use. The Arc utility will also extract the five programs from the 'Speech.arc' file. This is convenient, because we have one file to deal with instead of five. But Arc has another important function. It will automatically compress each program into a smaller unit. This reduces the time in transmitting and receiving the .arc file, a saving which can be quite substantial.

Arc must be used from the Command Line Interface (CLI), similar to the commands in the 'C' directory of your WorkBench disk. To extract an arc-ed file, you would type "arc x filename.arc".

Similar programs to Arc include Zoo (speech.zoo), Lharc (speech.lzh), Zip (speech.zip) and Warp (speech.wrp). The examples in brackets show how the archives may be listed in the BBS files area. Warp is a particularly interesting compression program, as it will archive an entire disk, boot-block and all. Lharc appears to be the archive program of choice at the moment. Arc and Zoo remain the most commonly used.

Updated versions of these public domain programs are available widely through Amiga Bulletin Boards and come with full documentation. Many Bulletin Boards have these essential utilities in a 'self-extracting' form, thus avoiding a 'chicken and the egg' situation. Look out for something like 'Arc.pak'.

Communications Theme Disk

- JR-Comm
- ARC
- Z00

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(see order form page 96)

The etiquette of protocols

● We have been working under the assumption that telephone lines are a wondrous thing. Not yet, anyway. Mysterious crackles are evident in normal phone conversations and these do not disappear when the computer does its stuff. 'Line noise' is a burden that the BBSer must bear.

Things are getting better though. The lines may not have improved substantially, but the error checking protocols certainly have. Very smart programmers have developed a means of minimising garbled communications. You will come to know these protocols as well as your family, but there is no need to understand them. Basically, the protocols will check each small segment of data received and sent against a Cyclic Redundancy Check (CRC) character. Any variation in the CRC patterns at either end will cause the last block of data to be transmitted again; that is, a Negative Acknowledge (NAK) is transmitted to the sender. If all goes well, the sender receives an Acknowledge (ACK) and continues pumping out the data.

Common protocols include Xmodem, WXmodem, Ymodem and Zmodem. Xmodem is good, Ymodem and Zmodem are preferable. As long as your terminal and the Bulletin Board are using the same protocol, there is no need to bother with the arcane mathematics. If you are interested in a closer look at error-checking protocols, there are lengthy text-files on the subject in the files area of many Bulletin Boards. Good luck.

Prepared for take-off

● There is one component of the electronic world that has not been adequately discussed. In fact, it justifies the very existence of the communication network. That component is real people. They say travel broadens the mind. Get to it!

"FidoNet" and "Fido" are registered trademarks of Tom Jennings. ❑

Baud information

V21 -	300 Tx /	300 Rx CCITT
V22 -	1200 Tx /	1200 Rx CCITT
V22bis -	2400 Tx /	2400 Rx CCITT
V23 -	1200 Tx /	75 Rx CCITT
V23ORG -	75 Tx /	1200 Rx CCITT
V32 -	9600 /	9600 Rx CCITT
B103 -	300 Tx /	300 Rx Bell (US)
B212 -	1200 Tx /	1200 Rx Bell (US)
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Communications Glossary

• **ACOUSTIC COUPLER:** A device that allows modem-generated audio signals to be transmitted into and received from a telephone handset. The handset is placed into rubber cups on top of the coupler. A small transducer at the bottom of the cups produces the actual signal.

• **ACK:** Acknowledge. Yes, I received that last byte, or string of bytes. Normally only used in file uploading or downloading.

• **ASCII:** American Standard Code for Information Interchange. A seven-bit code used widely in data communications to transmit the letters of the alphabet, plus the standard punctuation marks and certain control characters. Every character has a corresponding numeric value that is common on most home computers. This allows different types of machines to speak with each other.

• **AUTO-ANSWER MODEM:** A modem that can answer an incoming call by generating a carrier tone that signals the originating modem its call has been received.

• **AUTO-DIAL MODEM:** A modem that can simulate a telephone dialer using either pulse or touch-tone dialing signals.

• **AUSTPAC:** Packet switching network provided by Telecom. Allows computers which talk at different speeds and languages to exchange information.

• **BAUD:** A speed expressed in bits per second transferred over a communications line. 300 baud is roughly 30 characters per second.

• **BELL:** The American standard for data communications.

• **BINARY:** A number system using base two rather than base ten as in decimal.

• **BIT:** Short for binary digit (either 1 or 0), the elemental unit of digital information. Every character is made up of several bits (usually eight). A bit is either one or zero, corresponding to pulses that may be transmitted audibly on telephone lines.

• **BUFFER:** Often called capture buffer. In general, a temporary storage place for data. A capture buffer is temporary storage for data "captured" from a communications link.

• **BULLETIN BOARD:** A computer you can access via modem especially for leaving messages to other users. Various subject areas are available, and normally programs can also be uploaded or downloaded.

• **BYTE:** On an eight bit computer, eight bits make up a byte. Usually one byte is equivalent to a character. Each character in the ASCII set can be represented by only seven bits. Thus, a byte can be thought of as equivalent to a character for approximation purposes only.

• **CARRIER:** A steady signal that can be changed in tone (modulated) to transmit data.

• **CHECKSUM:** Used as a test for the integrity of information transmitted by any means where corruption may take place.

• **CONTROL CHARACTERS:** ASCII characters that do not print out, but are used to control communications. Control characters can, for example, signal a sender to stop transmitting information when the receiver is busy.

• **DATA:** Information in code, text or numerical form, generally represented in ASCII code for digital communications.

• **DATABASE:** A file or program which contains information in a specially formatted way. Normally made up of records and fields which are roughly equivalent to a card file system.

• **DOWNLOAD:** Transfer a file from another computer to your computer.

• **DUPLEX:** Refers to the two-way nature of modem communications. In full-duplex communication, both terminals can send and receive simultaneously. In half-duplex operation, both ends can send and receive, but not at the same time. With full-duplex, echo-back communications, a transmitted character is not displayed until it has been verified by the receiver.

• **ELECTRONIC MAIL:** Messages directed to a specific user on a Bulletin Board system. A personal message, similar to mail.

• **FREQUENCY:** The number of cycles of an oscillating waveform that occur each second.

• **GLITCH:** Hiccup on the telephone line. Some information may be garbled making it unreadable.

• **HAYES:** Command language for programming some modems.

• **LF:** Line feed. Moves the curser to the next line.

• **MODEM:** A device that modulates audio tones to carry digital signals and also demodulates the signals at the receiver so they can be understood by a computer.

• **NAK:** Negative Acknowledge. Used in file uploading/downloading.

• **NOISE:** Random disturbances that degrade or disrupt data communications, present to some degree in all transmission links.

• **ORIGINATE/ANSWER MODEM:** A modem that can either start a telephone call or receive one automatically. Some modems automatically assume originate or answer status, others require manual switching to the proper state.

• **PARITY:** A means of checking for errors by adding an extra bit to each ASCII character transmitted.

• **PROTOCOL:** A set or rules for the transmission of data. Protocols describe when transmission will start and stop, what error checking system is in effect and the like.

• **RS-232:** A standard for transmission of serial data covering both hardware configurations and transmission parameters. Different manufacturers may implement some or all of the RS-232 standard in their communications products.

• **SERIAL DATA:** Data sent one bit at a time, as opposed to parallel data sent several bits at a time. Modems operate on serial data.

• **SYSOP:** System Operator. The person who is responsible for the smooth operation of a particular remote access system such as a BulletiBoard.

• **TELECONFERENCING:** Several people get together to talk via electronic means, either telephone or computer, about a particular subject. Often used in multi-user remote access systems.

• **TERMINAL:** A device that receives or transmits digital information. Communications software is designed to control computers during terminal mode operation.

• **UPLOAD:** Transfer a file to another computer.

• **X-ON/X-OFF:** A protocol for pausing data transmission using simple control characters.

Writing in the dark or Wordprocessing?

by Andrew Farrell

A MULTITASKING environment is ideal for wordprocessing. As you can imagine, we are very fussy wordprocessor users. Having tried just about every package out there, it's amazing to see the vast gulf between the worst and the best. Some wordprocessors are more like writing in the dark. It's often hard to know how your document will really look when printed. Sometimes the cursor is so slow around the screen, it's hard to know what you just typed!

In past Annuals we attempted to cover all available choices. This time, I thought it better to mention our favourites and review two of the most heavily recommended.

I was a big fan of *WordPerfect*. I still am to an extent, however it continues to lack true Amiga attributes. Large documents can make it fall over. Other unexpected "features" have led me to search for a better text editor. I am currently using *ProText*. It's too soon to pass definite judgement, as the latest version arrived just prior to preparing this article. However, on the surface it appears to be a suitable replacement for *WordPerfect* in every sense.

However, most Amiga users will be interested in more than just a plain old text editor. You're probably thinking in terms of fancy fonts, pretty pictures and smart output. The trick is to find a wordprocessor that can also handle plain old text entry for letters to Mum, without the loss of too many smart bells and whistle type features.

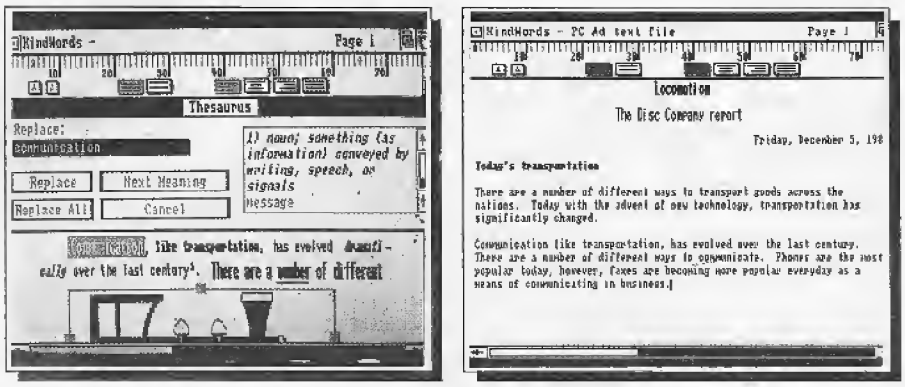
Brief history

● Here is the history of wordprocessing on the Amiga. First, there was *Notepad*. Choice magazine actually included *Notepad* in a wordprocessor comparison. Not surprisingly, *Notepad* did not fare too well. *Textcraft* succeeded next due to availability. Imitators followed in droves - some were shockingly bug-infested, others were too slow. Text editors appeared, and for many, continue to do a fine job especially for editing program source code.

Excellence! created quite a storm, with plenty of power but not much punch. After a few pages of painful typing, editing was a nightmare. *Excellence!* was the next best thing to a sleeping pill. Other lesser programs enjoyed a quiet life with mid-range features and more stability than earlier versions.

Entry level packages were leveled following the announcement that *Kindwords* would sell for $99. *Wordperfect*, a slightly enhanced port from the MS-DOS world, remained the only fast text editor with serious features. *Transcript*, yet to be reviewed, may change that.

However, for the WYSIWIG user, a truly powerful top end product has remained unavailable. Now, *Pen Pal* fills that gap very comfortably.



Kindwords

WYSIWIG?

● What is a WYSIWIG? What You See Is What You Get - yet another acronym of the computer industry. The idea is that what you see on the screen should be an exact representation of what will end up on paper. There are no funny codes to enter - changing text styles is normally handled via menus. Multiple fonts and graphics are usually supported.

Which wordprocessor?

● Most people will be spending between $100-$200 on their wordprocessor. So *Excellence!*, although a WYSWIG wordprocessor, at a tad over $300 is out of the picture. *WordPerfect* is beyond the budget of most too - even if a future version does eventually include graphics.

Our pick would have to be *Kindwords* 2.0 at $99 and *Pen Pal* at $199. Both are WYSIWIG, both handle standard text editing, and have the basic features people are after. Both handle graphics. *Kindwords*, although limited in fonts, produces very high quality output. *Pen Pal* is the most powerful of its kind. Although *Excellence!* has a few extra features such as a thesaurus and PostScript support, the evidence points to a future version of *Pen Pal* more than catching up in any areas which are lacking. Let's take a look at each of these two in more detail:-

Kindwords

● There can be no better value than *Kindwords 2.0*, now distributed in Australia by Dataflow for an amazing $99 recommended retail. What talents does one receive for this miserly price tag?

Not too few and not too many. *Kindwords* is a fine middle of the road package. It has one feature dot matrix owners will love. Print quality produced using *Kindwords* is exceptional thanks to its own

unique printer drivers. These far exceed the quality produced by standard drivers.

Some improvements mean a small trade-off in another related area. In this case, the number of available fonts is reduced. Standard Amiga fonts cannot be used.

Nevertheless, *Kindwords* has plenty of other fancy footwork. Setting text attributes such as justification requires a mere mouse click on the right gadget. Tabs are equally simple to set or alter.

Headers and footers can be added, with page numbering, as well as the page length and margins set using pop-up menu screens. An exceptionally clear and easy to use arrangement.

Under the extras menu you will find some of the most astounding features for a program in this price range. Full find and replace, a 100,000 word Merriam/Webster spell checker, 470,000 synonym thesaurus, and hyphenation control are all available. The dictionary and thesaurus may be optionally loaded into RAM if you have enough to spare. This greatly enhances the speed of operation of these functions.

Another smart feature is the ability to include graphics in up to 16 colours. Once imported an image can be cropped, sized and edited. Both low and medium resolution images may be used. High resolution images will import, however they are automatically reduced to medium resolution.

On screen editing is comprehensive. There are short cut keys for most menu options. A pop up menu with a condensed listing of every key function is available at any time. I was impressed by the ability to move by character, word, line or paragraph. Deletion is also supported in varying degrees. Of course, you can also use the mouse to highlight text prior to copying, pasting or deletion.

Other features include page numbering, mail merge, superscripts and subscripts, and fonts for maths, greek and symbols. Both disks in the package are unprotected, and the program installs on hard drives without any problem. Overall *Kindwords 2.0* is excellent value, with plenty of punch for the average user. My only gripes are the lack of a word count function and the slightly clumsy selection of different devices when using the file requestor.

Considering that *Kindwords* at $99 is truly top value, there is little else I could complain about. The nearest competitor would be at least twice the price. Amiga wordprocessing has come a long way from the days of *Textcraft*.

Pen Pal

● At last a WYSIWIG wordprocessor which is also well suited to standard text editing. As promised, the second version released in the United States has meant the release of a PAL version here. I was immediately impressed with the documentation.

A hefty ring-bound manual packed with illustrations, well designed pages, reference sections, indexes and it's well written. A fine example of what software documentation should be. *Pen Pal* was produced by Softwood - the same company who designed *Write and File*. No doubt, *Pen Pal* is a super enhanced version of the original *Write and File* program.

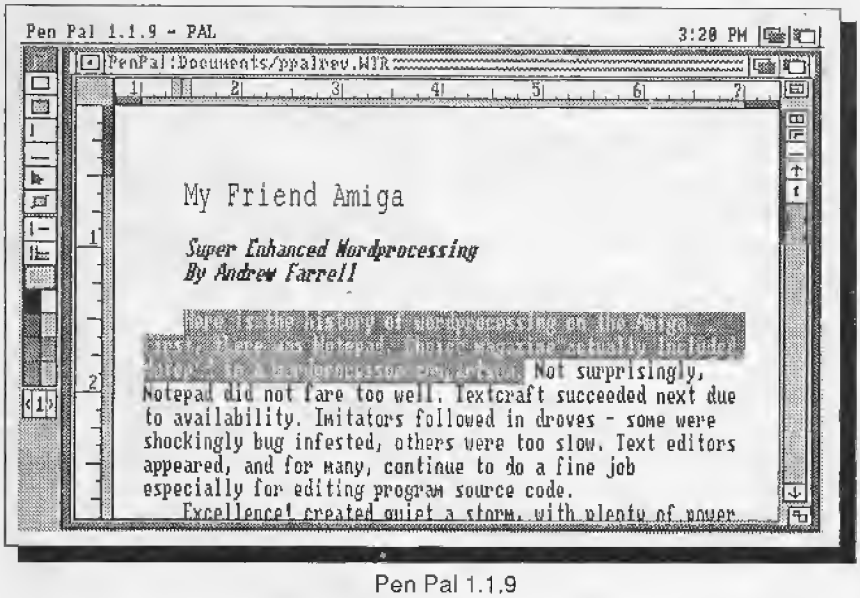
The intuitive smart mouse pointer has been retained and the overall look and feel of the program is similar. However, many additional features have been added, but not at the expensive of ease of use. Dare I say, *Pen Pal* is relatively user friendly. As you move your mouse around the screen, a small message box appears as part of the pointer as you pass over different gadgets. The message displays the function of the current gadget, which means it is very easy to find your way without referring heavily to the manual.

There are nine pull down menus. The ninth may spawn an additional two menus depending on the number of fonts you have available. Just to the left of the font menu is a point size menu, where all available point sizes are displayed and as you move down the menu, the fonts available in that size pop up. A very useful enhancement.

Graphics may be imported and sized or cropped. Text can be made to flow around the graphic or run against it along a straight margin. Even HAM images may be used. Text may be different colours, and empty or filled boxes or lines of varying thickness can be added to documents in different colours. Most of the program environment may be controlled using a series of preferences menus.

Up to four documents can be opened, with full search and replace facilities. There is also a 100,000 word dictionary which is easy to operate and reasonably fast when working from a hard drive. Not as intelligent as some spell checkers. Word, sentence and character counts are available - essential for serious writing. Adjusting margins, text positioning, style and font type is all very simple to do. All types of justification are handled along with subscripts and superscripts. Page numbering and dating is supported and you can view the entire page prior to printing.

Mail merge and reporting options are available too - along with a simple list

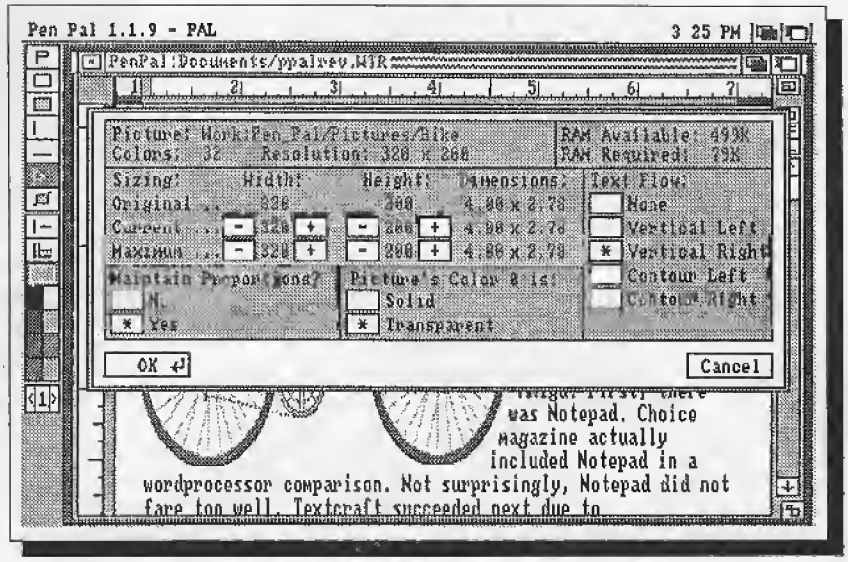


Pen Pal 1.1.9

manager for filing. *Pen Pal* seems to excel at reports - although it would have been nice to see some facility to produce various graphics from the list manager for inclusion in documents.

Also missing was a thesaurus - something most good wordprocessors always include. There is no auto-save option. Also, the program insists on using its own in-built colour scheme when first run, although you can change this later. There is much more to say about *Pen Pal*. No doubt further use will tell the true value of this program.

On the surface it looks every bit as good as we expected, with only a few small short comings. I would very much like to see support for a Postscript printer in the future. Thanks to Computermart of WA (09) 328 9799for providing a review copy. *Pen Pal* is also distributed by Pactronics (02) 748 4700. ❑



Pen Pal 1.1.9

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Desktop Video -an overview

by David Thompson

EVERYONE HAS HEARD the term "Desktop Publishing" - it has been around for quite some time and is probably the fastest growing use of personal computers. Desktop Video on the other hand, has in the past remained the domain of professionals, yet to penetrate the home market in the same way desktop publishing has. The main reason is the cost of the equipment required.

However, the Amiga has brought DTV to the home video amateur. With it, you can have a broadcast-quality character generator for titling or manipulating video frames in real time. A unique and very important feature of the Amiga is its ability to be Genlocked to an external video source. This lets you overlay your Amiga's graphics onto video with spectacular results. Furthermore, the Amiga's designers decided to make both PAL and NTSC versions.

Who is using it?

● Now that Commodore has a government contract to supply the state's schools with Amigas, there will be an increasing use of DTV in these institutions. Already many schools are experimenting with the Amiga in a graphics environment, creating either straight artwork or short animation sequences.

Professional video studios are using the Amiga in generating in-house business training videos. Company logos are digitized or drawn from scratch and then animated and super-imposed over the video to really set it off.

The semi-professional video fanatics who video weddings for a quid have found that the Amiga can give them the edge they need to attract more customers in an increasingly crowded market.

There is a very wide range of both hardware and software available, but most of this comes from the US and much of that is built to the American NTSC standard, incompatible with the Australian and European PAL system. This situation is getting much better as the European market grows and local manufacturers start developing hardware. We have been a little unfortunate in that the landed price of hardware has always been much higher than advertised in US magazines due mainly to importers and retailers taking their share of the profits before it hits the shelves.

The hardware

● Genlocks, framegrabbers and video digitizers are available for the Macintosh and IBM PC-type computers but are invariably expensive and incompatible with the PAL television standard, the one used in Australia. The PAL (Phase Alternate Line) television system differs from the NTSC (National Television Standards Committee) system in that the phase of the colour information is reversed after every line. Both systems can provide excellent pictures but each has inherent problems that tend to negate any particular advantage.

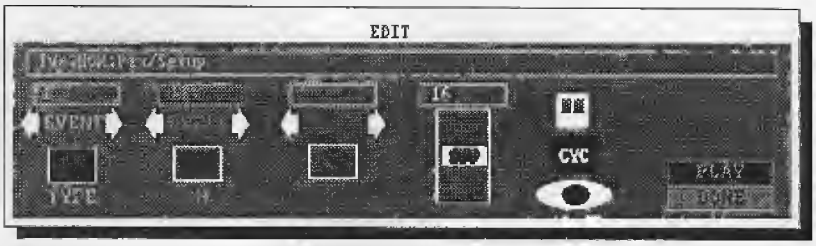
Digitizers

● Video digitizers are an excellent tool not only for use in DTV, but for artwork in general. Much better to start with a digitized picture and modify it than to paint it from scratch!

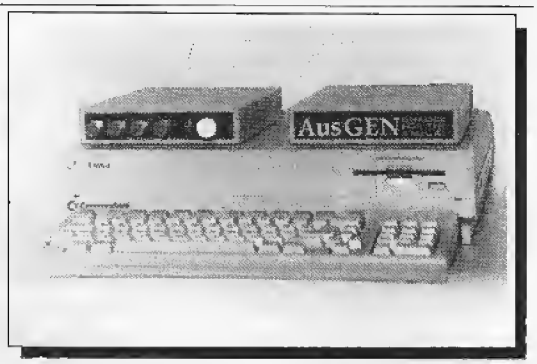
There are two main types of video digitizers, successive-scan digitizers and real-time digitizers. Successive-scan digitizers work by dividing a picture into vertical strips and digitizing each one-pixel wide strip during one frame. The disadvantage being that to digitize a whole picture takes up to half a minute, depending on the resolution required.

Digi-View Gold from NewTek is one such digitizer and has been extremely popular, now up to Version 3.0, and supports all of the Amiga's functions and capabilities. All you need is the *Digi-View Gold*, and a black and white video camera. NewTek supplies a colour wheel which you place in front of the camera to take three successive pictures, one red, one green and one blue. The software then reassembles the images into one image in the full 4096 colours. A colour camera can be used if you already have one, but interference lines tend to degrade the

Neriki DeskTop genlock



TV Show



AusGEN genlock

picture quality. Fortunately these patterns can be eradicated by employing a device to remove the colour information from the video signal.

A VCR can also be used as the video source if it has a super-still freeze frame. Because of the time *Digi-View* takes to digitize the image, the image must remain absolutely still between any exposures.

Frame grabbers

● Frame grabbers don't have this problem as they usually digitize the picture in one frame time (1/25 sec) or a non-interlaced picture in one field time (1/50 sec). Most frame grabbers digitize the picture in colour inside this time, but some take the easy way out and digitize red, green, and blue information in successive frames which can be a problem with fast-moving pictures. The rate of data gathered by the frame grabber is such that it is impossible to transfer it all to the Amiga in real-time so it stores the image in its own RAM and then transfers it to the Amiga via its parallel or expansion port.

Live! by A-squared is probably the best low-cost frame grabber, but no PAL versions have surfaced in this country as yet. *Perfect Vision* by Sunrize Industries is snapping at its heels and is cheaper but has the disadvantage of only being able to digitize in black and white, with colour images being constructed using a colour wheel, a la *Digi-View*. It also functions in low resolution only, the maximum resolution being 320 by 400. Progressive Peripherals market a top-quality frame grabber which supports all graphics modes and has very powerful image-processing software. A bit steep at US$ 599.99 though. Again, as far as I know, there are no Australian manufacturers producing frame-grabbers.

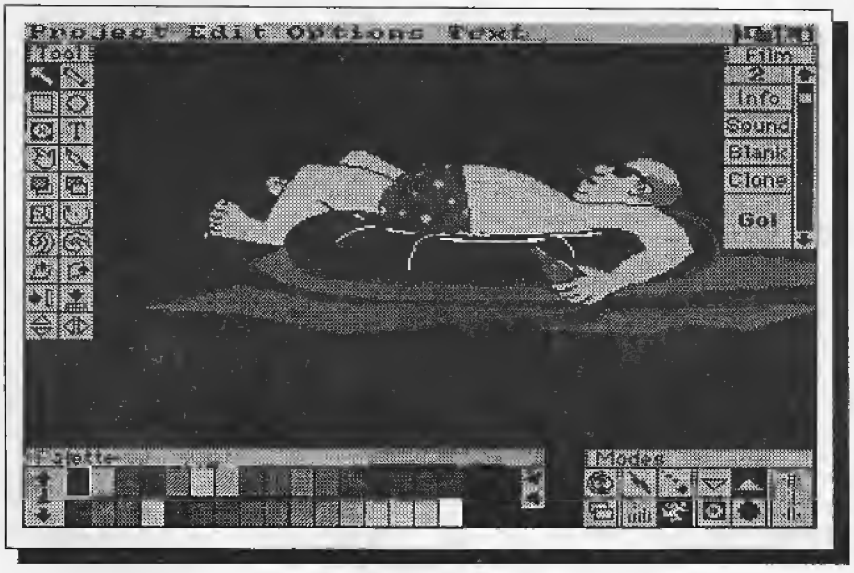
Genlocks

● One of the most amazing features of the Amiga is the ability for it to be Genlocked to an external signal. For the uninitiated, all this means is that the picture coming out of the Amiga can be aligned with the external signal so that they can be super-imposed without one drifting in a random fashion when the signals are combined.

For some reason, many people think that a Genlock can digitize pictures, and that these pictures can be manipulated and/or saved to a disk. The Amiga has almost no idea that a Genlock is connected, and absolutely no contact with the external video. The Genlock simply allows the signals to be combined.

For a picture to be overlain on an external video signal, it must be interlaced, as that is the video standard - (ever wondered why the Amiga has interlaced video modes?). This requires no change from the user's point of view as the Amiga will automatically interlace non-interlaced pictures without changing the way the picture looks, if it detects the presence of a Genlock. Some programs force the pictures back into non-interlaced mode and the Amiga loses genlock.

Problems occur when domestic video recorders are used, as these give such unstable picture and synch information that Genlocks have a tough time keeping the



Fantavision

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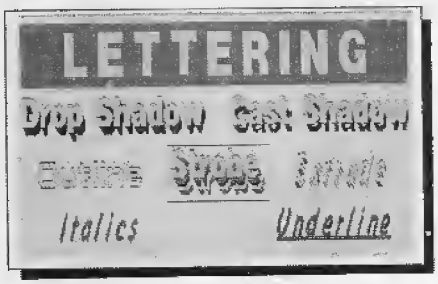
Midi Interfaces
Audio Digitisers

TV Text

Amiga in tow. Consider that the tape in your VHS player is stretching and wobbling continuously (something you usually don't notice when watching it on a TV) and every time it wobbles one way, the Genlock has to wobble your Amiga in synch with the tape so that the image appears to be fixed on the background. It's a miracle that VHS works at all actually, as the strip of information recorded on the tape is only 70 microns wide and the tracking is done mostly mechanically. Professional video studios use 1-inch tape machines with much higher bandwidth and a lot more tape devoted to the recorded information. Oddly enough the new generation of 8-mm tapes and recorders seems to offer higher stability and better quality even though the tape is narrower still.

With a Genlock, you can overlay titles, pictures and animation over video, just like the real thing. You can make your home movies look really sharp with rolling titles and subtitles. Animation-remember the animated duck that used to sigh and walk across the bottom of the screen whenever one of our cricketers got out for a duck a few years ago? Not a problem, just animate the duck using something like *Fantavision* and use your Genlock to overlay it over that video of you and your neighbor world series cricket match.

Genlocks usually have at least two video connectors for video in and video out. The signal you want to have as your background is fed into the Genlock and the resultant overlay is made available



TV Text

for viewing or recording.

Fortunately there are at least two Australian Genlocks available. First on the scene was Neriki with their Image Master. It was aimed at the high-end users such as video production houses and had features needed for such use but way beyond the need of the amateur video fanatic. Its intended use is reflected in its high price tag of over $2500.00. Neriki's latest model, the Neriki Desktop, has a much more manageable price of $1187.00 and contains several new and much sought-after features such as fading.

Neriki is joined at that end of the market by the Magni Systems Genlock from the US. It is a two-card system that plugs into a B2000 and has true broadcast quality, a million features and a matching price of around $2775 ex tax.

Also from Magnatech is the Vidtech Scanlock Model VSL-1 which provides broadcast-quality video outputs of processed reference and Amiga computer video signals. The system genlocks the Amiga computer to a reference (NTSC or PAL) or S-VHS video and keys (superimposes) the Amiga video over the reference video.The Scanlock features the latest analogue and digital design techniques.

AusGEN have brought out a new model, much more compact than the previous versions, and is now compatible with all Amigas. The new model is aimed at the casual user and semi-professional. The price is still $549.00 which represents outstanding value for money.

The Neriki Genlocks are sold by Neriki Computer Graphics who can be contacted on (02) 488 7133, the Magni Systems genlock and the Vidtech Scanlock are sold through Magnatech (427 0666) and AusGEN genlocks can be found on (02) 639-6686.

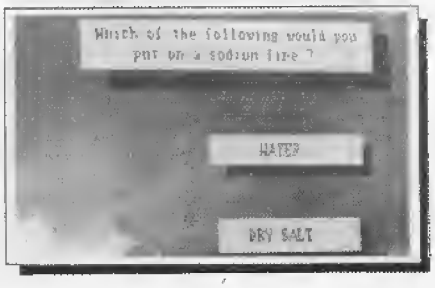
The software character generators

● The first step in enhancing your home video is to title it by means of a character generator, a device that creates text and places it in the form of titling onto video. You can turn your Amiga into a character generator with a number of programs. *TV*Text* by the Zuma Group was one of the first generators. It lets you manipulate characters brought in by way of standard IFF fonts. Other character generators include PVS Publishing's *Pro Video CGI* and *Pro Video Plus*, the current and most capable version. *Aegis Video Titler, TV*Show* by Zuma, *DeluxeVideo 1. 2, Deluxe Photo Lab* and most notably Deluxe productions, all by Electronic Arts are just what you need to create spectacular video effects.

To get the most out of these, you should consider investing in some Genlock equipment so that the above images are overlaid on your video, not just shoved in between successive takes.

Animation

● Animation is the Amiga's fort'e, so it's not surprising that tons of animation packages have been written. One of the first was Aegis *Animator*, followed by *VideoScape 3-D* , a 3-disk 3-Dimensional object manipulation program. Many followed, the latest being *Fantavision, Sculpt-Animate 4-D* and even the latest version of *DeluxePaint, DeluxePaint III*, has an in-



Text overlay

built animation package which has yielded some surprisingly good results.

Indicative of greater things to come is *Invision* by Elan Design, a program which is used in conjunction with the LIVE! frame grabber. It can process video coming into the frame grabber in real-time to create just about any effect imaginable.

Mind you, you can use the output of any Amiga program as material for recording, the only problem being is extracting it from the machine, the current Amigas having only a monochrome video output. A simple solution to this is to buy a video adapter that plugs into the RGB port of the Amiga and converts it to composite video. Forget about RF adapters, only misguided (or very poor) people use televisions as a monitors and the output of these adapters is very fuzzy. Amiga 1000 owners enjoy colour composite video built-in to their machines so no adapters are necessary.

How the final product will look is of course, up to you. The Amiga and its software give you the ability to create masterpieces, all you have to do is supply the instructions. ❑

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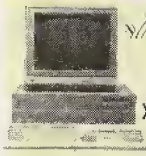

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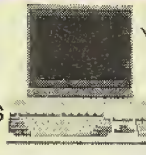

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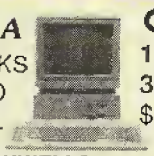

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Video blues or how do they do it ?

by George Kimpton

IT'S A FUNNY thing but the Amiga seems to bring out the budding Spielberg or Disney in many of us. Once we are exposed to the animated demos and the mind-boggling possibilities and capabilities of *DeLuxePaint III, Sculpt Animate 4D, Turbo Silver V3.0, Fantavision* and many others, the bug bites and we are no longer sane ordinary people.

We drool over the fantastic demo pics and can't wait to become Rembrandt ourselves. The animations are so easy in *DPaint* and *Fantavision* that they almost make themselves and we are inspired. We watch the TV station identification sequences or those fabulous movie titles and think to ourselves "we can do that".

Can we though? Just what do we need to produce those glorious titles and smoothly changing pics and how do we go about it?

Just stop a minute before we go off the deep end and first decide what we really hope to achieve. Do we only wish to impress our friends with what our Amiga can do that their PC won't? Do we want to polish up those home videos with titles and slick presentations, or are we interested in the professional satisfaction that comes from seeing our work in print in a manner of speaking?

Whatever we choose to do, if we wish to animate our pictures, we must remember that animation always requires the drawing of a number of frames each slightly different from the last to create the illusion of movement. These frames are then flipped quickly enough to visually suggest that the object is moving in a believable manner.

Tweening

• The main difference between the anmiation programs available today is the necessity in some programs to physically draw each frame in the series while in others it is only necessary to draw the first and last frames and specify how many frames in between.

In the latter case the program actually draws the in-between frames for you. This is called tweening and can produce some very good results as shown in the demos with *Fantavision*.

If we only want to make our friends green with envy or just show them how clever we are, the way ahead is fairly simple if we have *DeLuxePaint III* and just a little more difficult if we have *Photon Paint 2.0*. If we are lucky enough to also have *Fantavision* or *Moviesetter* it is possible to come up with some interesting results.

DeLuxePaint III or *DPaint*, as it is often called, is very easy to use. For simple animations such as a bouncing ball all you need to do is draw the ball, tell *DPaint* what you want the ball to do or move it where you want while *DPaint* snaps each frame and bingo it's done. Each frame is drawn by *DPaint* and all you need to do then is start it up. It can even operate in 3D with the ball zooming in or out while moving across the screen.

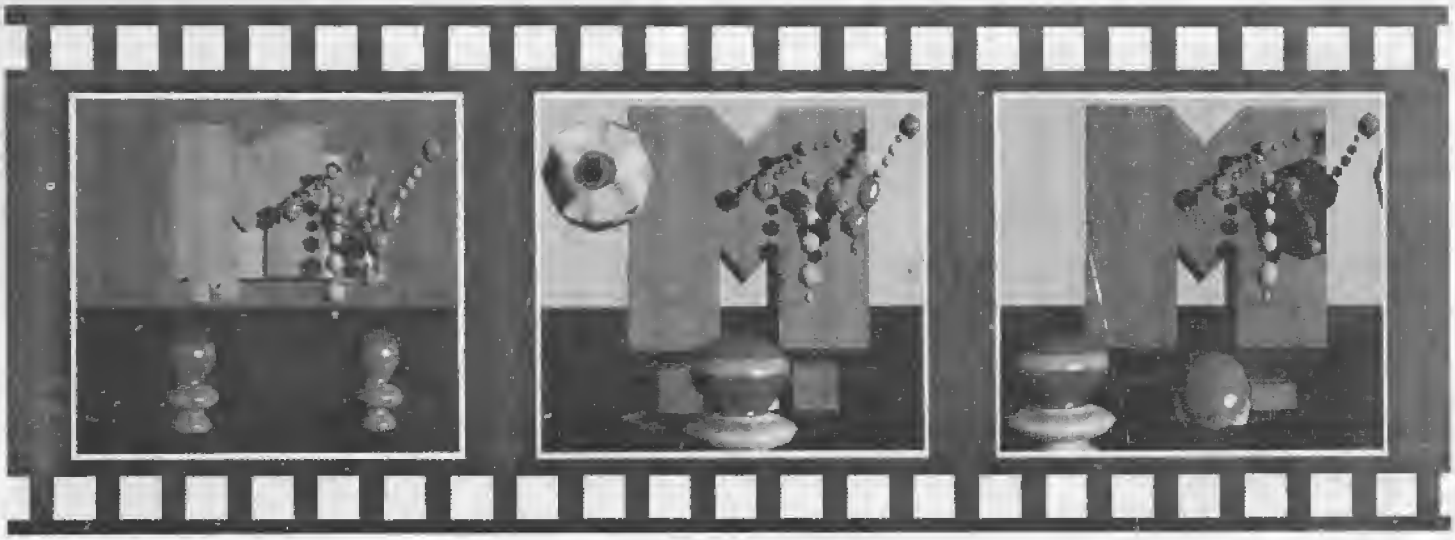
This type of animation could even be used for some fancy titling where logos or titles replace the ball.

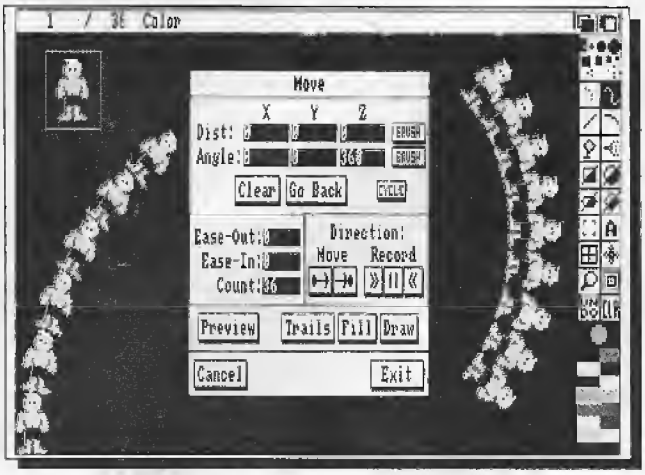
Photon Paint is a little more difficult in that it is necessary to draw each frame yourself. This does not create many problems because you have all the usual brush-handling facilities available plus the ability to merge, blend etc. with backgrounds of your own choice. The galloping horse demo is really good.

The tutorials with both *DPaint* and *Photon Paint* are very good and easy to follow.

With *Fantavision* we move into the area where we draw only the start and finish frames for each movement. With a series of movements you can produce a short movie and add sound effects or background music.

Moviesetter is similar to *Photon Paint*





DeluxePaint's ANIM requestor

Photon Paint

where each frame has to be drawn and flipped. As with *Fantavision* music can be added for effect or mood but here is where the similarities end. *Moviesetter* is intended for full video production the quality of which is only limited by your imagination, free memory and the quality of the artwork.

Basic drawing tools are available to draw or modify animations or backgrounds. The audio capabilities include full stereo digitised sound.

Moviesetter, along with a number of other programs such as *Sculpt Animate 4D, Turbo Silver, Videoscape* or *DeLuxe Video*, perhaps takes us across the threshold to the next level of animation where we move on from just impressing our friends to dressing up our home movies. This may include just titles or special effects to drive home a point in business presentations or school projects.

Just imagine last year's sales graphs animated to show the changes month by month complete with 3D effects, commentary and mood music. The mind boggles at the possibilities.

Video recorders

● Up until now we have been able to get away with fairly basic computer facilities. We may have been able to scrape by with 512k of memory and a single disk drive for some minor productions. With two drives and the preferred 1 meg of memory it has been possible to produce some memorable efforts, but when we talk Video Recorders that is another story. Extra memory and drives become essential with the more spectacular software.

In addition we need programs that operate in PAL mode rather than the American NTSC, otherwise we could end up with a black bar or some similar problem at the bottom of the TV screen on playback.

Next we need a suitable video output to the recorder. With the 500 and the 2000 it is possible to use a plug-in modulator to produce PAL video from the RGB output, but this has problems. Without a Genlock colours tend to smear and bleed because the Amiga operates at a different frame speed to the video recorder.

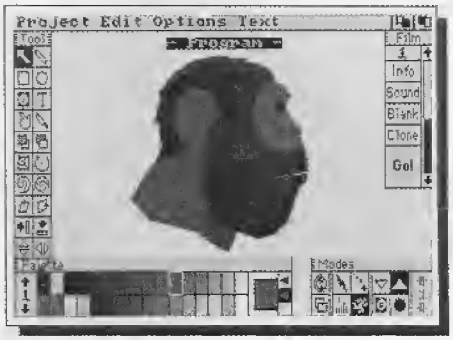
Genlocks such as the Australian designed and built Ausgen or Neriki operate on the PAL system. They plug into the monitor output and provide an output suitable for a video recorder. I won't go into the technicalities here as this is the subject of another article by the designer of the Ausgen Genlock. Let's just say a Genlock is essential for video recording particularly if you wish to overlay or mix the computer output with an incoming video signal.

High end programs

● The last eighteen months has seen a the release of a number of very useful high end programs for video titling and graphics. Unfortunately these programs usually need at least 1 meg of memory and run better with more. A second drive makes life easier as does a hard drive.

The earlier aegis videotitler and tv text have been supplanted by firstly *Pro Video CGI* then *Pro Video Plus* and now *Pro Video Gold* has been released in the States.

The *Pro Video* programs are excellent for titling with different font styles and sizes and a wide range of page transitions. They are so good that they are used on cable TV in the States and I suspect some advertisments here. The font resolution is top class with underlining and selectable shadows and background colours. With *Pro Video Plus* it is possible to load an IFF picture background for your text or even save a screen as an IFF pic for



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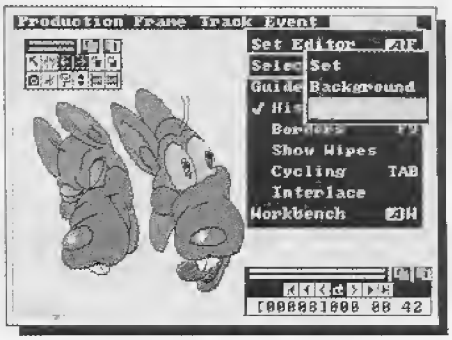

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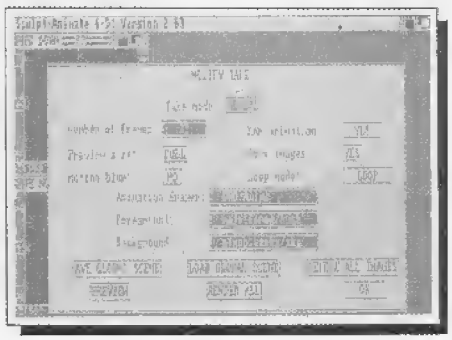
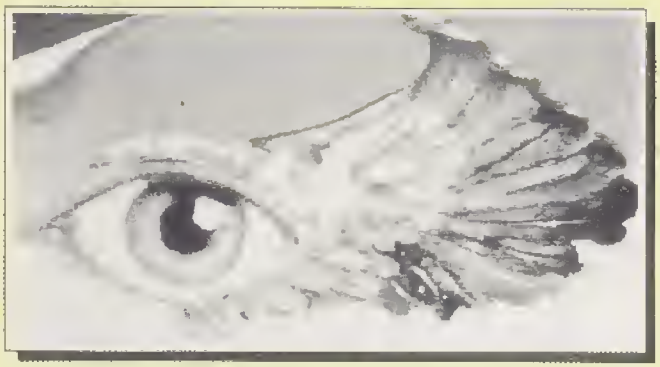


Sculpt-Animate 4-D



use elsewhere. The only drawback is that you must use *Pro Video Fonts* only for text unless embedded in the IFF background.

Another program that uses IFF pictures or objects to provide animated titling or logos etc is *Video Effects 3D*. The action can be very spectacular with say a logo zooming in from the upper right corner tumbling and or spinning as it progresses to finally fill the screen. While this is happening the title of the movie can be zooming in behind the logo waiting for the logo to shatter and disappear.

Logos can be extruded to provide a 3D effect and any objects used can be provided with a cast shadow. The only drawback to this program is the time taken to plot frames and the limited number of colours but the final results can be spectacular.

For those who have the time and patience plus the memory, video animation at its best can be achieved with *Turbo Silver 3.0* and *Sculpt Animate 4D*.

Just about everyone will have seen the Juggler demo, which was produced with *Sculpt*, or some of those animated demos out of Europe, and been captivated by them. This is the type of video you can produce with *Sculpt Animate 4D* or *Turbo Silver 3.0*.

Both programs use the computer to plot the movement frames between selected key frames instead of making you plot each movement for each frame. *Sculpt* uses what is called tweening while *Silver* uses a story line to define movement paths.

Quite frankly I have not attempted an animation in *Sculpt* but the results I have seen are good. However you don't have the same control over the "tweens" as you have in *Silver*. In *Sculpt* the computer decides the best fit of shapes during movement as in *Fantavision*.

Both programs are complex and require concentration in their application and attention to detail. They also require patience while they plot. I usually set up *Turbo Silver* around bedtime and get up to find the finished plots waiting for me in the morning.

One negative comment I have about *Silver* is the poorly written manual and lack of tutorials. Initially considerable concentration is necessary to follow the steps necessary to produce a picture cell but the results can be simply fantastic once you come to grips with the operating system.

One last program to consider is *Director*. This program can be used with frames produced by *DPaint* or *Photon Paint* and requires the writing of a script for their manipulation. This is a program for the professional animator and can be used very effectively. Definitely not for the amateur unless he has plenty of time.

To recap, for those who don't have deep pockets *Deluxe-Paint III, Photon Paint 2.0* or *Fantavision* are probably your best bet. Those who wish to use their computer for video enhancing of tapes need a Genlock and plenty of memory. For software they might look at *Pro Video Plus* for text titling and *Video Effects 3D* for visual effects. For the more adventurous I would recommend a look at *Turbo Silver* as my first preference with *Sculpt Animate* my second choice.

Other programs do exist which may be excellent but I have not had the opportunity to look at them and cannot comment on their excellence or otherwise. I offer my comments based on my own experiences. ❑

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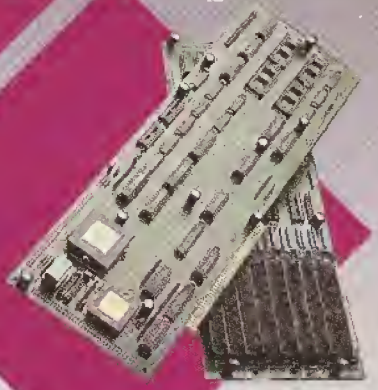

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Desktop Publishing
A business proposition...

by Andrew Farrell

LIKE ANY GOOD technology, Desktop Publishing also recently went through what is traditionally known as the backlash phase. At this point in development, the cynics and critics tell us it was all just a passing whim; that desktop publishing had no true place in society. We hear stories of disillusioned users producing poorly designed newsletters, discovering they are not gifted at page layout - it was all too complex, overrated and now their laser printers lie idle.

To some extent the stories are true. Like any other part of computing, much fun can be had tinkering, but for the business minded, good results can only be attained after much experience and after educating the user as to the many intricacies of the area in question.

Desktop Publishing is a demanding job. In the past several people would have played a part in designing and laying out a page. Today one single individual has the entire responsibility. Obviously, some new skills must be learned. There are many rules of page design and text layout which must be followed. Ignoring these basic requirements can end in disaster. A pretty document that nobody will read is not an uncommon sight.

So before you press the up button at corporate affairs to register your new desktop publishing business name, be sure you're prepared to learn fast. If you do, there are many opportunities still waiting to be had as the Amiga takes a firmer grip on the world of laser printers, fonts and scanners.

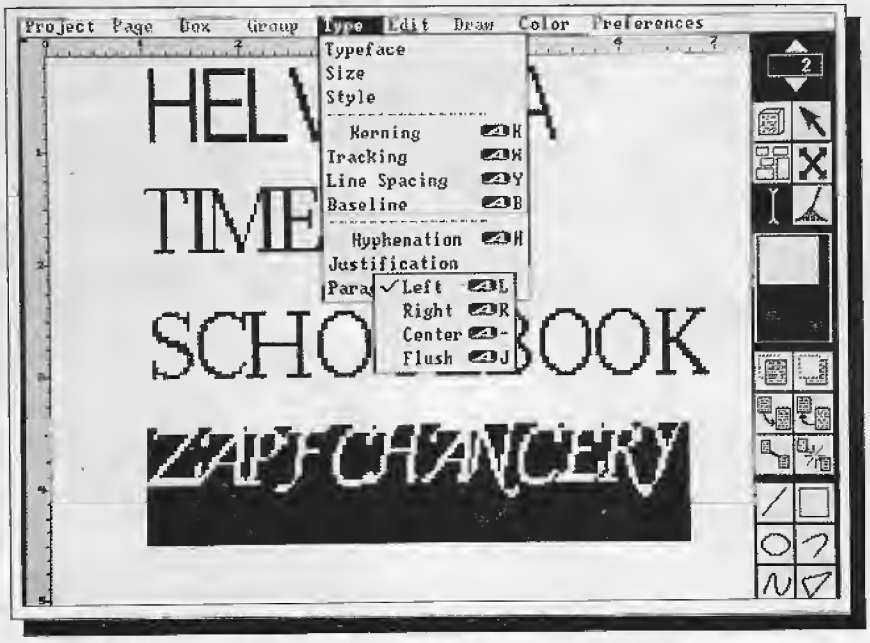
Developments are in the wings that will see Amiga well placed as a solid contender to any of the more popular brands. The advantages of using the Amiga now are many. It is these that should be exploited in adventuring into new markets.

The program of choice

● Serious desktop publishers should consider one program, and one program only. No other package comes close, is as reliable, or well supported. *Professional Page* from Gold Disk is now handled exclusively in Australia by InTouch Tutorials (02) 954 3730. The price is better than importing your own copy direct from the United States. There is also an excellent upgrade policy which enables owners of *PageSetter* or *PageStream* to purchase *Professional Page* at a reduced price.

The program comes with a well written manual, with both a reference and tutorial section. The document is well indexed, easy to read and often illustrated. Not surprisingly, it was produced using *Professional Page*. American magazine *INFO* and the Canadian publication *AmigoTimes* are both produced using *Professional Page*. If you need convincing as to the power of the product, order a copy of either magazine from your local dealer.

Version 1.3 of *Professional Page*, released late 1989, includes Outline Font Technology. We are promised this feature will also be a part of Workbench 1.4. In essence, it means the number of available fonts is increased, and that dotmatrix output is of a far improved quality. Version 2.0 will be on the way mid to late 1990. Many more embellishments will be contained in this very major overhaul.



Professional Page

The printer of choice

● Everyone talks about PostScript printers. They seem to cost a whole lot more-are they worth it? Yes, a PostScript printer for the serious user is a must. PostScript is a language which enables the page layout software to define the fonts, lines, boxes and curves which make up a page as a series of mathematical and geometric type instructions. In this way, a design may be scaled up or down many times without loss of definition.

A nonPostScript printer is limited to the built-in fonts, which may only be scales between a limited number of sizes and retain smoothness. PostScript also enables structured clipart or drawings to be printed perfectly.

If you need good results, PostScript is a must. The option exists to output what you would normally send to the Post-

Script printer to a file. This file may be transferred to IBM or Macintosh format and then taken along to the nearest Linotronic bureau. Your page design can then be printed professionally at 1200 dots per inch - four times more detailed than the laser printer.

I use an NEC Silentwriter LC890. It has proved to be a reliable, flexible printer. Unlike most laser printers which deflect the laser by means of a rotating mirror, the LC890 uses LEDs which are switched off and on to produce a point on the light sensitive drum. This design is more reliable, although some problems may occur in printing solid black designs.

An Apple Laserwriter can be purchased secondhand from newspaper trading columns for around $5000. A new laser printer will set you back a little under $9000. If you plan on setting up your own typesetting business, a laser printer can be leased through your local bank. Renting a laser printer is out of the question-costs of over $1200 per month are not unheard of.

The Amiga of choice

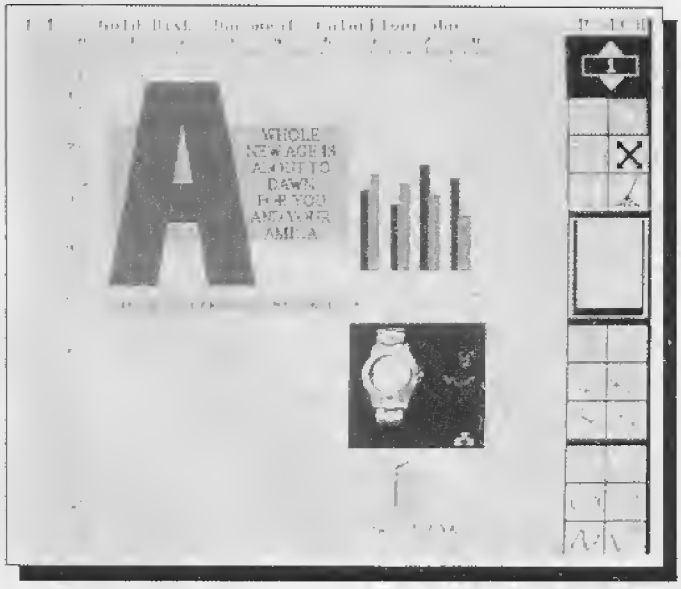
● Page design consumes vast amounts of RAM. A two-megabyte-plus Amiga 2000 is the best machine. A flickerfixer card is a nice extra if you can afford it. This will enable you to display interlace images on a multisync monitor essential for magazine work. You can view your page in more detail for longer periods of time. I tend to switch interlace mode off and on as required. Surprisingly, the flicker is less noticeable after a while.

A hard disk is also essential. Load it up with clipart, preset page definitions and a directory for all your major clients. Make a backup often. A page of design lost could mean reconstructing many hours work and it's no faster the second time through. At least 20, preferably 40-70 Megabytes of storage is a good start. A fast hard drive will improve your days throughput immensely. Grab a copy of DiskMaster from your local dealer this program will help you move files around and keep the hard disk in order. *Quarterback* will make backing up the entire drive easier-it's the best hard drive backup program around. You can backup or restore selected files, and the entire operation is fast and efficient.

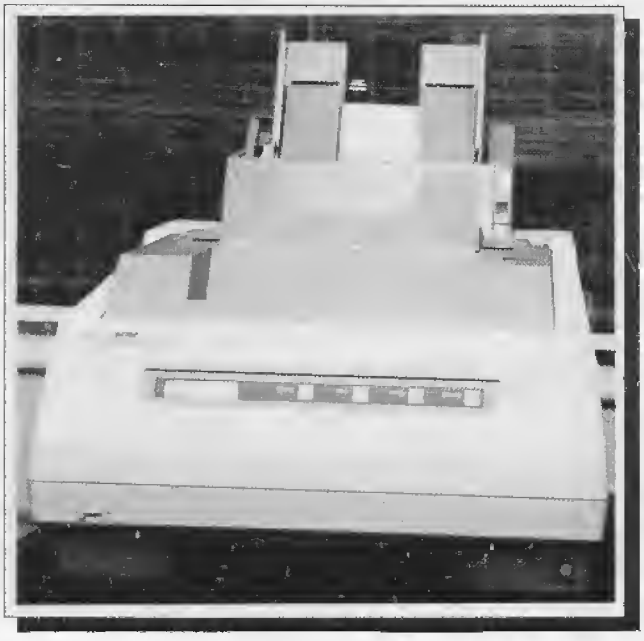
A modem will help for getting last minute pages to your linotronic typesetter over the phone. A 2400 baud model is a must. Any less, and transfers will take forever. PostScript files are very large!

A market niche for desktop publishers. Most desktop publishing programs can handle the basics without any fuss. However, the Amiga excels especially well at a few odds and ends which are very difficult on other machines. I have found *Profesional Page* is very slick for producing forms. Lines and columns can be arranged without any fuss using the grid option. At the click of the mouse a text box can be made to have a border which becomes the columns and rows of your form. Text can then be placed inside the rows by adjusting the margins of that particular box. Although demand for forms is not huge, it is substantial.

Seek out your local quick printer. Impress him with your short turnaround, ease of making corrections, wide variety of fonts, clipart, predesigned newsletters and colour separation facilities. Before too long, you should be able to build up enough work to keep you in business. A Fax is handy for sending proofs, and a few good books on layout, as mentioned previously, are a must if you want to take on the real interesting jobs for larger businesses in your area. You may have some success approaching other businesses directly. Make up a flyer using your equipment and have Australia Post do a drop to all P.O. boxes. This method is relatively cheap, and reaches most businesses in the area. ❑



Professional Page



NEC Silent Writer

Still the king - DeluxePaint III ...animation is a cinch

by Andrew Farrell

SINCE 1985 *DeluxePaint II* has remained the choice paint package for Amiga artists. Dan Silva, gifted programmer and designer of *DeluxePaint*, has turned what started as one night's hacking into a whole new version of this brilliant program.

Electronic Arts kindly list the 60 Kilobytes of major improvements in the first chapter of the manual. Most outstanding is the addition of animation facilities.

Exchanging graphics between programs was never difficult on the Amiga. The majority of packages have adhered to the IFF protocol for storing bit-mapped images. However, in the animation arena a whole swag of different formats exist for storing frames.

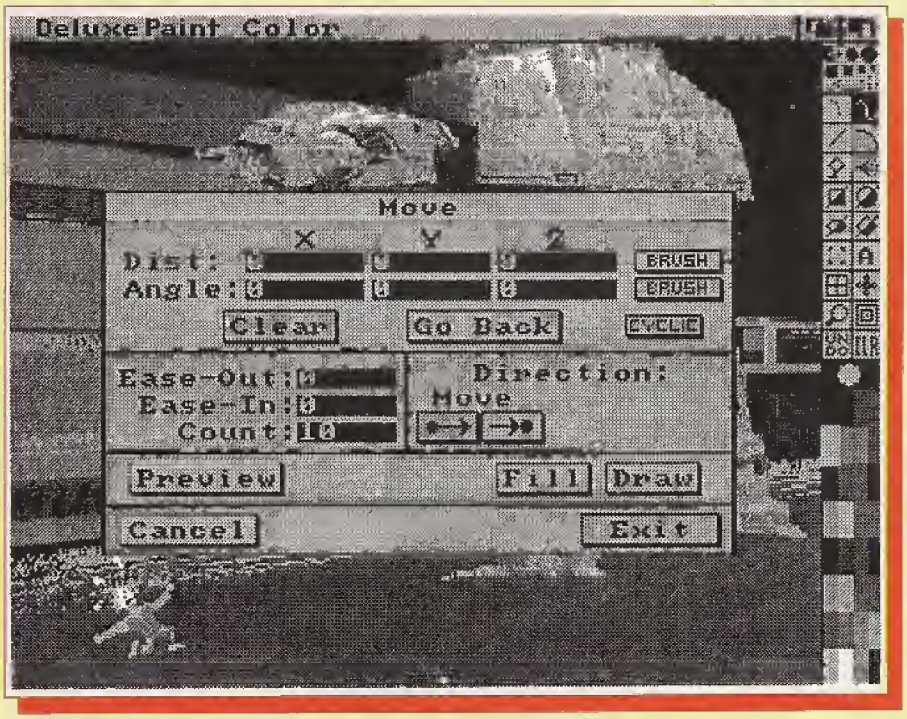
Most popular is the method used by Aegis in products such as *Videoscape 3D*. *DeluxePaint III* has adopted this same format. This means you can design a complete animation with 3D objects using *Videoscape 3D*, then load it directly into *DeluxePaint*, and edit your creation frame by frame.

A single key press, and the animation comes to life. This combination of powerful editing and image generating or processing has never before been available on such inexpensive hardware.

Simple animation can be achieved by painting each frame the old fashioned way, or by dragging a brush across a series of frames which move by as each image is painted. There are also animated brush facilities to speed the process up further.

Using the MOVE menu, a brush can be rotated about any of three axes. This enables objects to be translated closer to or farther from the viewing point. Rotation of a title as it spins off into the distance can be achieved by entering only two numbers into a requester box. These are all very impressive effects for your home video or even semiprofessional use.

Even a modest artist like myself could easily construct a simple animation. The procedure is reminiscent of those flippit cartoons you see scrawled on the corners of school text books. Since only the changes to each frame are stored, a reasonably large number of frames can be painted.



DeluxePaint III fully supports our PAL format televisions, and computers. For video work, overscan painting enables a maximum resolution of 704 x 680 picture elements. Additional colours are available using Extra Halfbrite. In this mode 32 additional colours only half as bright as the first 32 colours are available. This is ideal for shadow effects and shading three dimensional objects.

File name requesters have been vastly improved. All devices connected are allowed for including RAM: and any hard disk partitions. The same requester is now used for loading fonts, so there is no longer a limitation on the number you can have available.

The brush menu allows outlines to be drawn around a brush, for some unusual op-art effects using fonts. All of these extra features are described completely and understandably in the manual. Plenty of examples and tutorials are included using brushes and animation included on the three release disks.

When shopping for your copy, be sure you get the proper PAL version. The best way to check is select the ABOUT option from the picture menu. You should see the version number is 3.14. Another way to check is to look at the startup menu. You should see a requester enabling you to select between PAL and NTSC. This is not present on copies imported directly from the United States. These imported versions do not fully support animation in PAL mode and may run into memory problems or unexpected crashes.

DeluxePaint II owners may upgrade by sending their original manual and a cheque or postal order for $84 to ECP, Deluxe Upgrades, 4/18 Lawrence Drive, Nerang 4211. For more information call (075) 96 3488. Recommended retail price is $249.95. Available from most Commodore dealers. ❑

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CALIFORNIA ACCESS ™

Home Accounts

by Ken Longshaw

HOME ACCOUNTING IS like home sewage treatment, messy.

The shoebox filing system has worked for generations, so why change?

Why use an accounting system in the home anyway? It comes down to finding out where those elusive dollars really go and saving as many as possible. This is called cash incentive.

Home Accounts (HA) by Digital International is the first accounting package I've used that suited the simple householder. No Invoice Modules or Stock Inventories, just a budget and regular or one-off payments.

The Basic concept of the program is defined in the manual as using the following system logic.

"To set up, enter basic information about each account, eg: Current or cheque, savings, credit cards etc. Next define the various expenditure items then enter a budget for each item each month. All regular transactions are treated as standing orders.

"User updates all manual transactions and standing orders are automatically posted from the current date. The system is user friendly."

Twelve months accounts are kept in one file. The system allows up to 10 account types, up to 100 standing orders and 360 transactions per account and up to 60 expense allocations.

HA has full database search facilities on many fields and a variety of report functions as well as comparison of actual to budget expenditure.

The package was easy to get into. I simply followed the tutorial in and created a list of all the bank accounts I run and the credit cards I use.

A useful feature is the maximum and minimum balance warnings. Too much in a non-interest-bearing account or too little in a savings account can add or take a few worthwhile dollars of interest over a year.

Next all regular payment areas like petrol and rent or mortgage, housekeeping and insurance. With those all in, a template is in place to develop into a variety of forms.

From year to year this template can remain as it can be called up to a new file without any transaction details. This function is menu requested and gives a fresh start to the financial year's accounts, or just to experiment with different "what if's" as I did.

A budget was the first thing I set up to try a projected view of my future. By an estimate of the expenses over the twelve months I saw how much each area is going to cost.

A general monthly outgoing came next from a report requester and a yearly total was included at the end, to further depress me. (fig1)

Getting on to the real use of the package, I filled in the regular payments I made and the timing on each, eg:

- MORT (payment description)
- TRAN (transaction type, in this case transfer)
- $180.00 (amount)
- W (regularity D/W/F/M/B/Q/H/Y or A)
- CQ1 (Account from which payment is made)
- MOR1 (Account for payment to go to (optional))
- Credit or debit Memo,
- Comments you may wish to append.

This results in a neat list of my financial commitments for twelve months.

"Statement verification" can be included on all regular and manual transactions to check against the month end bank statement.

Sorting the fields is a very simple "point and "SHIFT" left mouse button". eg: by type of account, credit, debit, date or regularity.

I found the automation of HA very helpful. As you enter each transaction the whole result is recalculated, immediately without any extra routines.

As each account is loaded directly into RAM all of this is F...A...S...T and disk is not accessed till the save at the end.

As the individual account file, ie: my

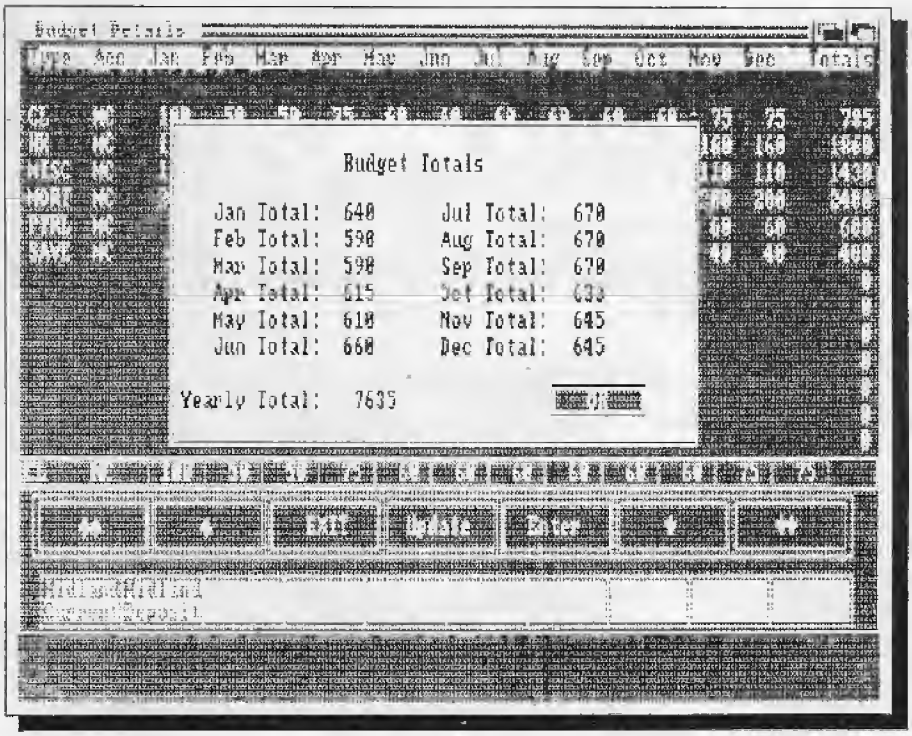

Figure 1: report requestor

Continued on page 44

DO YOU NEED . . . ?

Help ?

BOOKS - Far and away the best range of books ever released from the beginner to the programmer. eg Graphics; Disk Drives; "C"; Tricks & Tips; etc (disks also available). And the essential Hard Disk Back Up Utility.

Office Management ?

WORD PROCESSORS - the definitive no nonsense programmes BECKERTEXT and PROTEXT; SPREADSHEETS - the user friendly DG CALC; DATABASES - from powerful and cheap, to the absolute best - the fully relational PROFESSIONAL DATARETRIEVE. And of course, the superb MAIL SHOT PLUS.

Home Management ?

The fully menu driven and extremely flexible HOME ACCOUNTS; and your personal time management - DAY BY DAY.

Graphics ?

The M4 MOUSE is probably the best so far released for the Amiga; EXPRESS PAINT 3.0 arguably the most powerful colour graphics package available.

Education ?

Such great titles for your children as FUN SCHOOL 2, BIRDS 'N' BEES, SPACE MATHS, SPEED READ, etc.

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1989 accounts, is loaded into memory the system date triggers an automatic update and recalculation so HA needs very little looking after other than imputing the manual transactions.

Another feature I love, as a Clayton's Accountant, is the on screen help facility. All commands are explained in brief in whatever area you are working in.

Memos are also available to attach to the various transactions etc. to remind you of vital TO DO things eg: TAX RETURN NOW DUE OR I WILL GET A FINE URGENT!

Reports are a zone on their own. The combinations are endless and entirely at your mercy. A full selector for transactions, accounts, months and finally format pops up. From here it is possible to print to screen, disk or printer.

The default is to screen with all accounts, months and transactions. A long list of bizarre numbers bearing little resemblance to my expectations flows down the screen page by page. After the program asked if I wanted to see page five and get really depressed, I gave up and tried a pie chart.

Charts take on a whole new meaning when you do a pie chart for a year with only one month's accounts in memory.

Creation of bar charts and pie charts comes as an alternative choice under Reports menu. I recommend faking a year first by altering the date on loading a file. By typing in October 1990 I came up with another result that showed I was not treasurer material but would finish the year with a net savings of $4.53

As accounting programs go I like HA for its simplicity. A full office would find it limiting but for the 99% of us who just lead quiet lives HA is fine. It does not aspire to Harvard or the Mint but is a dream to get into. I have used it for two months at time of writing and done some dastardly things to it in that time. I will use it for the rest of this financial year in my home.

Of course all of this opened a can of worms. Can the tax police burst in and take my floppy into custody as evidence? Is it a dangerous practice to have a modem hooked up at the same time as you do your accounts? Is big brother watching?

Thanks to Pactronics (02) 407 0261 for the Review copy. RRP $89.95. ❑

Superbase Professional for fancy filing

by Andrew Farrell

SUPERBASE PROFESSIONAL will do for database applications what Rice Bubbles did for breakfast. Crack and his snappy friends are all there, squeezed into one tidy package, bursting with features you would expect to find in *DeluxePaint* - not a database management program.

My favourite demonstration of *Superbase* is a file included with the program disk call "sbpeople". Being form orientated, the structure of *Superbase* is very different to traditional programs. The "sbpeople" file contains data relating to the various personnel who engineered *Superbase Professional*. Having opened a form by the same name, the file comes to life.

The right of the screen displays the information about the person. Click on the camera icon and the left of the screen displays a black and white digitised image of the person's face and signature. An example record is included in figure 1.

Assuming you could get all your clients to send you a recent photograph, this would be an ideal way to stay familiar with people you primarily correspond with over the phone. A digitiser would cost around $900 including the black and white camera and interface. Some degree of expertise is required in order to obtain the best results. There are bureaus around which offer a digitising service for a small fee.

The form design - the arrangement of the pictures and data on screen - can be set up in any fashion you desire for any number of applications using the separate form editor program. One of the most powerful features is the ability to build in file relationships and multiple files into one form.

For more complex applications, a complete programming language is built in to *Superbase* enabling the entire work environment to be controlled. You can design a system with your own custom pull-down menus and screen gadgets or stick to the conventional on screen A-Z type menu or use hot-keys or function keys.

For the casual user, a file may be easily designed using the mouse and keyboard. A VCR type control panel at the bottom of the screen enables browsing, editing and searching of the file. Very powerful report facilities are included. If you are moving over to *Superbase* from an existing application, you can import a variety of file types including *dBase*.

Superbase is available in three entry levels - and you can upgrade to the next level for the difference in price. There is a lot of potential in the database management area for the Amiga. While animation and desktop video continue to expand, database and wordprocessing based installations of Amiga hardware seem neglected. The software exists - all that is required is more concerted support from the publishers, distributors and developers involved in these areas.

Part of the problem with any database application is that most end users do not have the time to familiarise themselves with every aspect of the program. Designing a program to extract the full power from a package like *Superbase* can be quite a daunting task for the inexperienced. A number of Amiga programmers now provide custom database solutions using specially designed forms and custom programs. Contact Andy Crerar on (02) 661-1832 or Piere Du Parte' on (042) 716 355 for further information. ❑

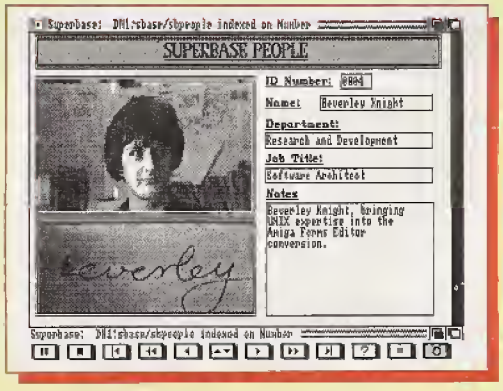

Figure 1: example record

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Let's play games

An introduction to computer games

by Phil Campbell

GAMES, GAMES, GAMES. Everybody loves them - it's just that some people don't like to admit it. They tell themselves that they bought their Amiga for a lot of very serious reasons. For wordprocessing. For desktop publishing. For working out the family budget. For designing the extensions on the house. For educating the kids. Those are all good reasons - but they're mainly excuses. I'm convinced that the real reason people buy computers is so they can play games.

Watch them next time you're in a computer shop - the yuppie dads buying computers "for their kids." They come in wearing their business suits. They try to look serious. But all the time, they are casting furtive glances at the games.

Well, guys and gals, mums and dads - now is the time to come out of the closet. Now is the time to stand tall. Admit it. Computer games are great. And you love 'em. If you've got an Amiga, you've got one of the most impressive games machines ever made. So make the most of it!

Besides, computer games are useful. First, they're relaxing. Unwind, take that load off your mind, and blast a few thousand aliens. Excellent therapy, and cheaper than seeing a shrink.

Secondly, games are the best way to introduce people to computers. Even my Mum and Dad were keen to try out *Shufflepuck Cafe* from Dataflow - in no time at all, they had mastered moving the mouse. Not only that, they both decided that using a computer could be fun.

It goes further. Computer games make kids curious. Curious about how the computer actually works. Nathan, my six year old son, is already asking about sprites and animation and serious stuff like that. "How does it work" is the age old question. Somehow, though, kids don't seem anything like this curious about spreadsheets! To tell you the truth, neither am I.

> "Computer games make kids curious about how the computer works."

The last year has been a good one in the world of Amiga games. There have been plenty of new releases - some average, some below average, but some truly exceptional.

Dragon's Lair blew everything else out of the pond with its remarkable cartoon style graphics and arcade perfect gameplay. Originally a video disk based arcade game, nobody could have imagined that a home computer was up to such a daunting task. But take a standard 512K Amiga, add a team of brilliant programmers from ReadySoft - and six image-crammed disks later, there it is. A remarkable achievement.

Of course, there were plenty of other games with impressive graphics and sound effects. Graphics and sounds are the Amiga's strongest features.

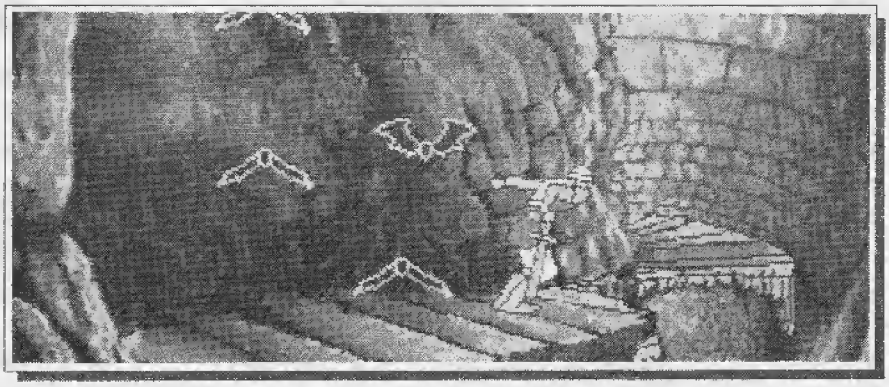
On the other hand, there has been something of a trend towards producing "quick and easy" conversions of games from other computers. A representative of French software house Infogrames told me that all their development work is done on Atari ST computers - games are simply "ported over" to the Amiga.

There are a number of reasons - the Atari ST, being a less complex machine, is easier to program. And the Atari ST is very popular in Europe. And it's much more economical than developing unique programs that use all the potential of the Amiga. Etcetera, etcetera.

In the end, it all adds up to quite a number of inferior games - games with "grainy" looking graphics rather than the smooth colour contours the Amiga can produce without even trying. Games with jerky animation making little use of the Amiga "blitter" chips. Games with tinny sound effects. Cheap. And nasty. Let's hope this trend dies an early death as the Amiga outstrips the Atari ST in popularity.

Back to the bright side. In the following pages, you'll find a rundown of the best games of the year gone by - the games we've enjoyed the most. We've included details of our favourite games in every category, from shoot-'em-ups to adventures, from sporting simulations to strategy games. There's even an overall "Game of the Year" award.

As always, reviewing software is a subjective business. Everyone has different tastes. Suffice to say, these are games that have stood the test of time. These are the games that we still like to play - the games we play for a bit of fun, after reviewing hundreds of others. After all, even software reviewers like playing games. Don't we all? ❑



Dragons Lair

Here they are - the chart toppers of '89. All the major software suppliers have provided us with a list of their ten best sellers ... Michael Spiteri and Phil Campbell have thrown in a list of their favourites too.

Questor
1- Dragon's Lair
2- Gunship
3- Kick Off
4- Airborne Ranger
5- Red Storm Rising
6- California Games
7- F-19
8- Honda RVF
9- The Games - Summer Edition
10- 3D Pool

Ozisoft
1- Batman The Movie
2- Altered Beast
3- Vette
4- Ghostbusters II
5- Test Drive II - The Duel
6- NZ Story
7- Super Wonder Boy
8- Fighting Soccer
9- Greg Norman's Ultimate Golf
10- Precious Metal

Mindscape
1- Shadow of the Beast
2- Fiendish Freddy
3- Lords of the Rising Sun
4- Silkworm
5- War In Middle Earth
6- Barbarian II
7- Shinobi
8- Mindscape Basketball
9- Jaws
10- Rocket Ranger

Pactronics
1- Lombard Rally
2- Skweek
3- The Champ
4- Pioneer Plague
5- Adult Poker
6- Mortville Manor
7- Freedom
8- Mercenary Compendium
9- Triple Power Pack
10- Flippit

Dataflow
1- Where in the World is Carmen Sandiego?
2- Sim City
3- Times of Lore
4- Operation: Cleanstreets
5- Ultima IV
6- Star Wars
7- Autoduel
8- Space Racer
9- Moebius
10- Ultima III

ECP
1- Bards Tale II
2- DeluxePaint III
3- Zany Golf
4- F/A-18 Interceptor
5- Ferrari Formula One
6- Heroes of the Lance
7- Wrath of Nikademus - Phantasie III
8- World Tour Golf
9- Demons Winter
10- Bards Tale

Campbell's Choice -
Phil Campbell's 10 Favourite Games of '89
1- Sim City
2- Silkworm
3- Dragon's Lair
4- Rick Dangerous
5- Shufflepuck Cafe
6- Total Eclipse
7- 3-D Pool
8- Zany Golf
9- Live And Let Die
10- Lombard Rally

Michael Spiteri's Top Ten Adventure Games
1- Mortville Manor
2- Corruption
3- Fish
4- Balance of Power
5- Beyond Zork
6- Reach for the Stars
7- Personal Nightmare
8- Bard's Tale III
9- Pool Of Radiance
10- Journey

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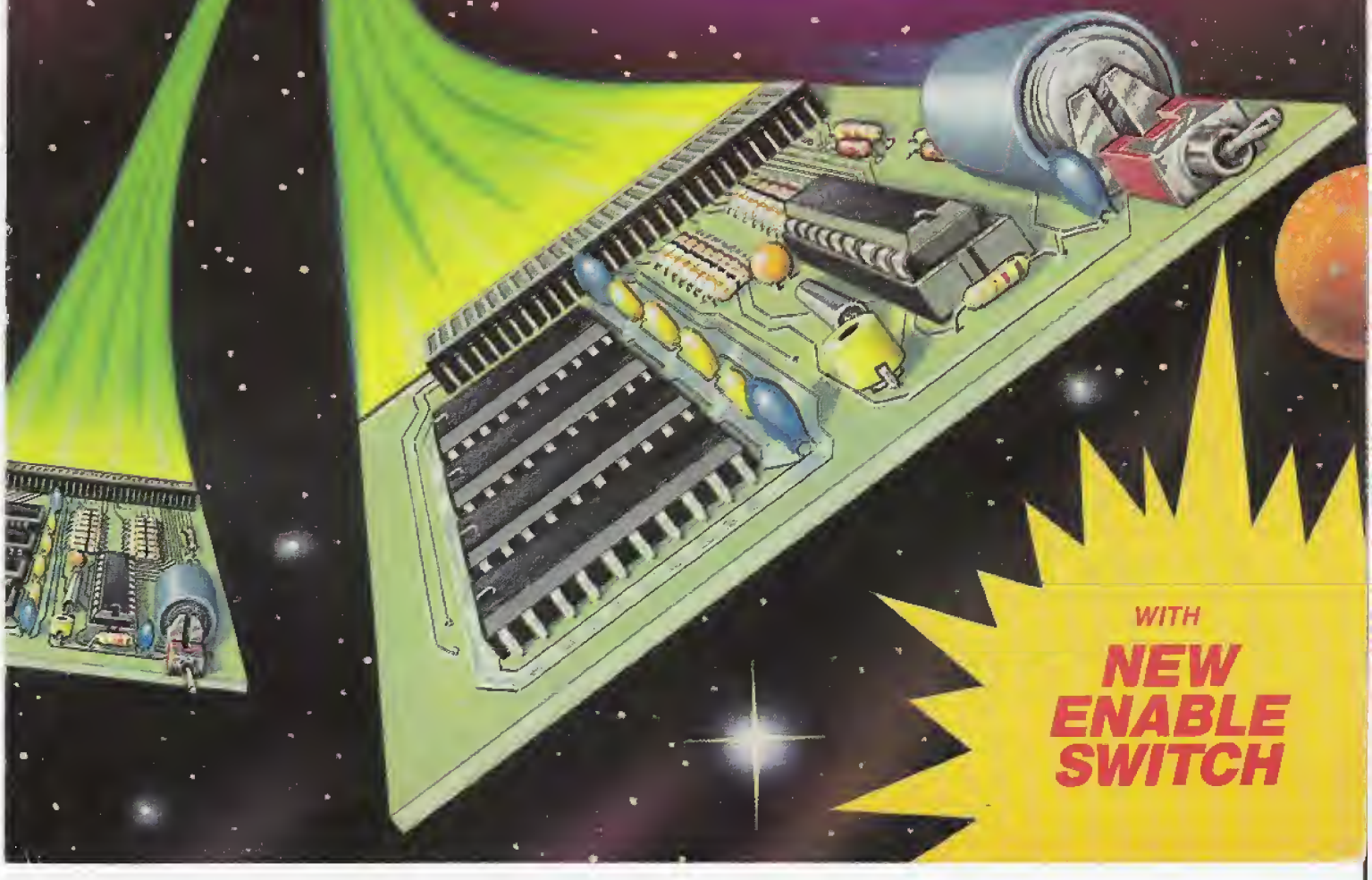
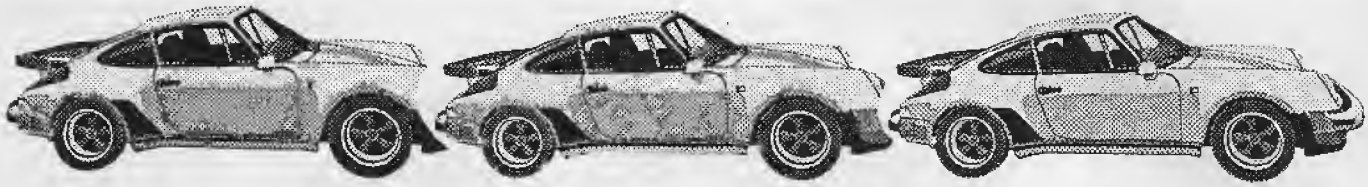


WITH

NEW ENABLE SWITCH

Two of the best racing games

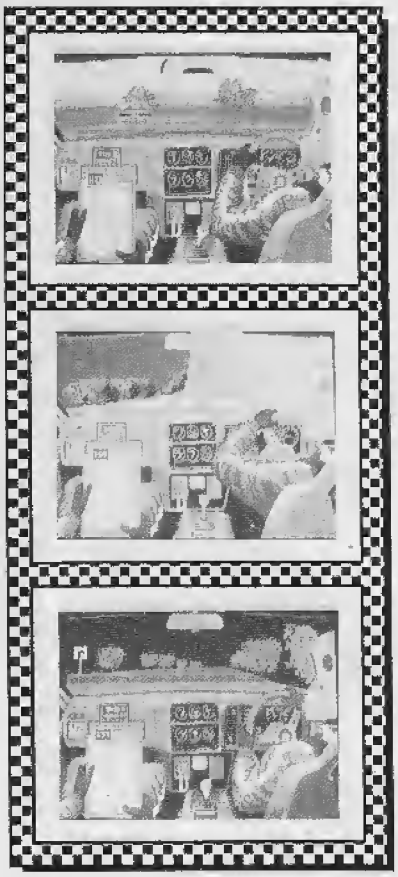


Nothing beats the thrill of speed - and your Amiga has got plenty of horsepower under its bonnet. There are bike racing games, car racing games, even boat racing games. Here's a rundown on two of the best ...

Lombard Rally

● IF IT'S REALISM you're after, you can't go past *Lombard Rally*. Set in the English countryside, this is car rallying at its roughest and toughest. *Lombard Rally* lands in Australia with impeccable credentials. The English computer press have given the game rave reviews. And you can soon see why.

The interior of your car is shown in luxurious detail, complete with an animated driver and navigator. The game is obviously designed for experienced back-seat drivers; your view is from immediately behind the driver's left shoulder. From here, you have a clear view through the windscreen to the road ahead.



You are driving a Ford Group A Sierra Cosworth, a 300 bhp machine which can be customised once you have won a few races and earned a little cash. You may, for example, like to fit a new engine - then again, if you drive like me most of your cash will go towards essential repairs.

The joystick doubles as steering wheel and throttle, while a press of the fire button changes gear - up if you are accelerating, down if you are pulling back. The animated driver performs whatever action you select. When you press the button, his arm moves the gearstick, when you turn, he turns the steering wheel. This is neat.

The road is dangerous. Hills are often followed by sharp bends, and you get very little warning. But perhaps that's what rally driving is all about.

The rally takes you through highways, dirt tracks and winding mountain roads, each of which must be driven in daylight, fog and darkness. You must qualify on each section of the course before you can compete in the full Lombard Rally, a restriction that virtually counts me out. So far, my times are at least two minutes outside the qualifying time on each leg. I will keep practicing.

Lombard Rally, distributed in Australia by Pactronics (ph 02 748 4700), is guaranteed to drive you round the bend. So far, this is the ultimate car simulation in terms of realism, though you may find it lacks a little of the "wind rushing through your hair" appeal of some of the faster but less detailed games on the market.

RVF Honda

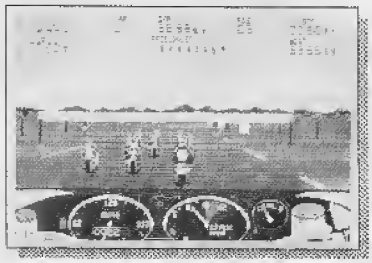
● IF IT'S BIKES you like, try this one for size. It's a Honda RVF 750, a purpose-built racing machine with ultra lightweight pistons and valve gear, titanium conrods and four 34mm venturi Keihin constant vacuum carbies. Quite a machine!

The action is fast and furious, the technical details are precisely accurate, and besides ... it's lots of fun to play.

The lower section of the game screen displays the instrument panel of your bike - speedo, tacho, temperature gauge, and gear indicator. The track is shown in the upper part of the screen. The scenery is nice, but my racing career would be looking a lot better if there weren't quite so many trees beside the track. I have hit them all at least once.

Pushing forward on the joystick opens the throttle; the longer you keep the stick forward, the harder the RVF will accelerate.

To change up a gear, simply press the fire button while you accelerate. To change down, press while pulling the stick back. This is a simple enough procedure, but timing is all important. The optimum time to change up is when the rev needle enters the orange section on your tacho. Be careful, though. After one or two spills your instruments may well



stop working. From then on, it's a matter of playing it by ear.

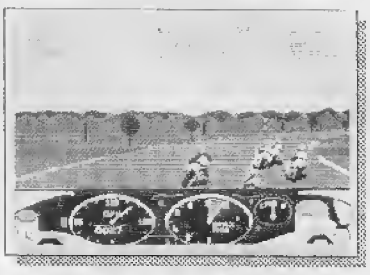
Races start with a crowded field. To do well, you really have to get to the front right at the start and stay there. No mistakes, no spills, not even a sideways glance. The guys you are racing against are robots, computer controlled, and they don't put a foot wrong.

There are 24 tracks, graded according to difficulty. I guess I will never see Donington Park or Hockenheim - these courses are reserved for the World Championship. Detailed League statistics are maintained on the game disc, together with championship and lap record tables. Here is my only claim to fame - I now hold the course record for Tetbury. I clocked 1:01:72 for the 2.82 km track, shaving almost four seconds off the previous best. So why can't I win a single race?

RVF Honda is a top-class game. If you like the thrill of speed, the sound of high revving engines and the smell of burning rubber, then you are bound to be impressed. Animation is excellent, with a lot of cute little details - if you stop midway through a race, for example, your red-leathered rider steps off the bike, shakes his head and checks the throttle control. Crash sequences are good too - your bike and rider spiral through the air and land in a convincing heap.

Sound effects are realistic, with engine sounds digitally recorded from a genuine RVF Honda. As a final touch, a special Datalink cable lets you play the game with a friend. Not by modem, unfortunately - the cable is connected to the parallel port, so the two computers must be side by side. Even so, it sounds like a lot of fun.

Distributed by Questor (ph 02 662 7944) *RVF Honda* has a recommended retail price of $49.95, a small price to pay for a simulation of one of the most expensive motorcycles in the world. ❑



Strategy Game of the Year -Total Eclipse

Some games take more brains than brawn. We call them STRATEGY GAMES, 'cause that's what they're all about. Smart thinking. You could argue for years about which ones are best. Some are incredibly complex, and take months - or even years - to master. TOTAL ECLIPSE was chosen for another reason. It's incredibly "playable."

MY HEART POUNDS as I enter the chamber of Nephthys. There is only one hour left. Only an hour until the moon moves in front of the sun, triggering an ancient Egyptian curse. Only an hour until the world is utterly destroyed. No wonder I feel a little tense.

It sounded simple at first. All I had to do was make my way through the pyramid, find the Temple of the Sun God, and solve a simple puzzle. Success promised wealth beyond my wildest dreams. Failure? Large scale fireworks, just as soon as the sun and the moon are aligned in a total eclipse.

Now that I am here, of course, things are not quite so simple. My water jar is almost empty, my torch battery is fading fast, and I'm lost. They said to draw a map as I went. I tried, but there were just too many doors and too many levels.

This is *Total Eclipse*, my choice for Strategy Game of the Year. In fact, if the elusive sensation of "Being There" counts for anything, then this is one of the best games I have ever played. The fast moving 3D perspective views - dubbed Freescape 3D on the box lid - really work. *Total Eclipse* is more than a game. It's an experience.

As you move your view changes in real time. Quickly. Smoothly. As if you were really there. Naturally, this technique is not new. It has been tried before. But it has never worked like this.

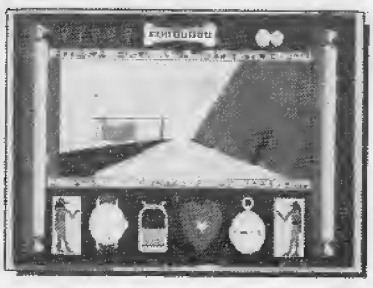
Past attempts have been slow and jerky, full of unrealised potential. Games that you admire for a moment before you play something else. *Total Eclipse* is different. Moments after the title screen has dissolved, you find that you have actually walked inside a pyramid. And there is no turning back.

The lower section of your screen displays a beautifully crafted heiroglyphic style control panel. A watch shows elapsed time, a compass shows your heading, an image of the sun shows the progress of the eclipse, and a small red heart pulsates as an indication of your health. Your torch is essential in darkened rooms - an icon toggles it on and off. Don't forget to switch it off when you're not using it. Finally, a glass jar shows your water supply. The level gradually drops as the game progresses, and you will need to find as many reservoirs as you can to replenish it.

Total Eclipse can be controlled by mouse, joystick or keys. A panel of control icons are provided for "mouse mode", though I rarely used them. Generally I found myself using the cursor keys to move about, and the mouse to aim and fire my gun. The system is very flexible - all controls are active, so you can switch between them at any time.

Sound effects are very well done, but unfortunately you have to make a choice - you can either hear what's happening in the game, or play along to a dramatic eight minute sound track - a hackle raising number with an authentic Egyptian flavour and a dramatic sounding pipe organ. A nice touch, and with eight minutes between repeats, it shouldn't prove annoying.

Released by Questor (ph 02 662 7944) on the new MicroStatus label, *Total Eclipse* is a top quality game. At $49.95, it represents very good value - a long term challenge, and a heck of a lot cheaper than a ticket to Egypt. ❑



Shoot-'em-up of the year

Let's face it. We all like games with heaps of shooting and explosions and rank violence. They're typically called "shoot-'em-ups," and that's what they're all about. The rules are simple. If it moves, shoot it. So what's the best buy? Read on ...

THE LAST YEAR has not been a particularly good one if you like lots of bangs for you bucks. In fact, you can count the number of good Amiga shoot-'em-ups on the fingers of a butcher's hand.

But here is a game with substance, style and masses of firepower. Here is a game that is immensely playable. Here is a game that other reviewers have dubbed "totally awesome" and "absolutely brilliant." The game is *Silkworm* - and don't be fooled by the innocent sounding name. *Silkworm* has got more BLAPS - my new acronym for BLAsts Per Second - than anything I have ever seen before.

Set in the not-too-distant future, *Silkworm* is a war game. The military commanders of the One Continent Alliance have rebelled. The majority of the armed forces are under their control, and only you can stop them. You and a friend, in fact, for ideally *Silkworm* is a game for two players.

The opening scene sets a sombre tone - the colours are subdued. The sky is gun-metal grey, the fields are a faded powder green. If ever I saw a battle weary landscape, this is it - certainly no place for a family picnic. On a technical note, two level horizontal parallax scrolling is used to create a sense of perspective. Which means, for the uninitiated, the mountains at the back move across the screen slower than the roadway at the front.

Suddenly, the sky is filled with a swarm of enemy helicopters. Three gun emplacements are set into the side of a hill, and a convoy of tanks crawl onto the screen from the right. They open fire - all of them. All at once. It is not a user-friendly introduction to the game.

I control a high powered helicopter. I prefer it to the armoured jeep. In two player mode both vehicles are on screen simultaneously, and good teamwork will give you a distinct advantage. This is good. I am very much in favour of anything that makes computer gaming a more sociable activity. Two joysticks are desirable, but not essential, as the game can be configured for keyboard control.

Although the vehicles are said to have equal fire power, to my mind the chopper is a little more maneouvreable, and the missiles it fires look bigger. But the jeep, on the other hand, is strategically placed to attack the vulnerable underside of enemy craft, especially the deadly "Gooseneck Helicopter." This machine assembles itself in mid-air - self propelled components link up to form a formidible fighting machine.

Without the jeep firing from below, this guy is almost impossible to destroy - the only other option is a kamikaze attack from directly above the gooseneck linkage. A hairy business indeed, but *Silkworm* is addictive enough to keep you coming back for another go - and another, and another. I finally cracked it, earning a massive explosion and a double fire power bonus for my efforts.

Silkworm is an excellent game. Massive fire-power, high speed action, and a screen crowded with enough enemy missiles to keep you perched on the edge of your chair - what more can you possibly want?

Distributed in Australia by Mindscape (phone 02 899 2277), *Silkworm* has a recommended price of $59.95. My advice? Don't miss it, at any price. ❑

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Best sporting simulation
Zany Golf

Sporting simulations are becoming more and more popular. Games like KICK OFF, a soccer simulation, are selling like hot cakes. So are the many sporting collections like CALIFORNIA GAMES. But our pick of the bunch is something a little bit out of the ordinary ...

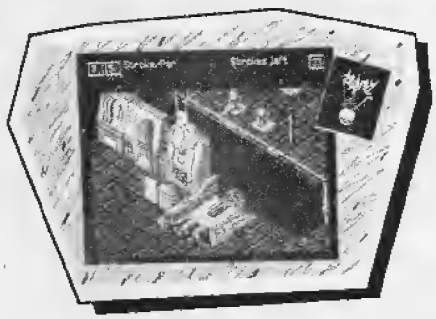
GOLF IS SILLY enough. After all, what could be more ridiculous than chasing a small white ball around acres of prime real estate? But *Zany Golf* takes the cake. Imagine a multi-level mini golf course with a bouncing hamburger blocking the second hole and a giant pinball machine to negotiate on the fourth. Strange? That's just the beginning.

Programmer Will Harvey has created a digital fantasy world - a golf course that could exist nowhere but in the mind. The result is a masterpiece, a graphically beautiful computer game with haunting appeal.

Amiga graphics and sound are used to full effect. The sound track is beautiful - a different, fully orchestrated backing for each hole. The music has something of a fairground feel, but with a difference. Perhaps you could call it dream-like. Call it what you like - it works.

The game opens with the Windmill Hole, an easy par 2 that has you dodging spinning Windmill blades for bonus strokes. You begin with 5 strokes, and those you don't use are credited to the next hole. By the time you get a little way down the track, you need all the credits you can get.

The game is completely mouse controlled. It works very smoothly. First, move the pointer to touch your ball. Then click, and move the mouse back as if you are stretching an invisible spring. Release the button, and the ball shoots forward. As in snooker, there are only two rules for success - "Hit it soft," and "Hit it soft." All manner of obstacles await the over eager.



The Burger Hole is next. A tasty looking Big Mac sits firmly on top of the hole, waiting to be bounced loose with a few swift clicks of the mouse button. Once it starts bouncing it is a little easier to avoid, but good timing is required. With a well placed bounce on the corner puddle of tomato sauce, I found I could usually handle this hole in two strokes - right on par.

Most of the holes are reasonably manageable. The Pinball hole is unpredictable - usually I waste far too many strokes getting through it. Another hole has electric fans at every bend in the course - after your stroke, you must wiggle the mouse back and forth to make them spin. With the right tactics, you should be able to blow your ball right around the track to score a hole in one.

The other holes are just as whacky, and just as much fun. Except, of course, for the ninth. This hole, "The Energy Level", is played in an eerie room called Doctor Frankenstein's Country Club. To reach it, you must battle through all the other holes. To complete it ... well, I still don't know. Yesterday I came close. Some time today or tomorrow I'll probably succeed. Somehow I need to hit a switch on the wall that activates the laser beam, then knock my ball into a funnel that will take me to the upper deck. At least, I think so.

This is indeed a beautiful game. It is an original concept, brilliantly executed. Recommended retail price is $49.95, a bargain for such a work of art. For further information, phone ECP on (02) 949 7300. ❑

Graphical masterpiece .
Dragon's Lair

Here's a game that's worth buying just to show off what your computer can do. A prime example of Amiga graphics - and not bad fun to play. The graphical masterpiece of the year, Dragon's Lair ...

ARCADE ADDICTS WILL remember it well. *Dragon's Lair*, the game that caused a sensation - the first game to feature Laser Video Disk graphics. This was not your average video game. Instead of generating the images in memory chips, multiple cartoon sequences were recorded on the Video Disk. By moving the joystick at appropriate moments, you could determine the outcome of each scene.

Say, for example that Dirk the Daring - our hero - comes upon a deadly dragon. If you press the fire button at precisely the right moment, he draws his sword and swings it. The scene changes - a decapitated dragon lies dead on the floor, and Dirk strides on.

If, on the other hand, you miss your cue, the Video Disk instantly displays another sequence - fried Dirk. Insert another dollar and try again. That's right - a buck at a time!

In the early days, people crowded around to watch the game unfold. Probably because they couldn't afford to actually play it! But remember, we are not talking about "computer graphics." The high quality pictures on the screen were not created by the computer - they were genuine, television type cartoons stored on Laser Disk.

Nobody really expected to see this game running on a home computer - especially not a full blown, detail for detail copy. But here it is, running happily on my Amiga - and not a Video Disk machine in sight. Instead, there are six Amiga disks crammed full of delightful graphics, stereo sound effects and enough frustrations to last for the next five years.

As the game opens, Dirk stands on a drawbridge. An ominous looking castle forms the backdrop. Dirk is not merely similar to the hero of the arcade game. In every detail, in every movement, he is the same. He turns smoothly, almost filling the screen, and sets out to cross the bridge.

Suddenly, a gaping hole opens be-

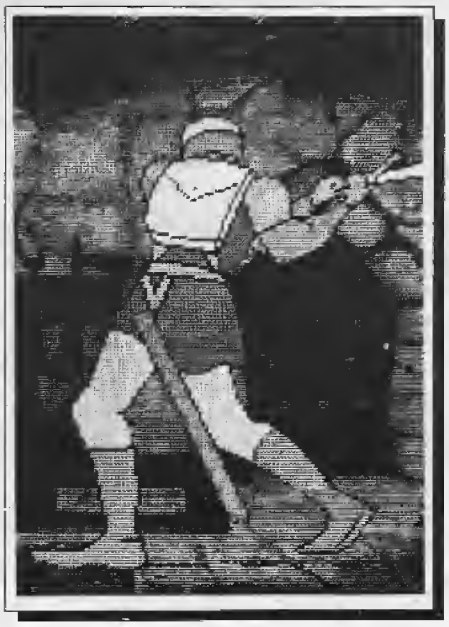
neath him. What should I do? I try to jump, but to no avail. Dirk slips through the hole, and barely manages to grip the edge with one hand. Predicament enough, without the deadly tentacles of a hungry sea monster reaching out of the water below. I thrust the fire button, and Dirk swings his sword - the creature subsides, leaving me just enough time to urge Dirk back up through the hole to the safety of the castle door. Phew.

That encounter lasted little over 15 seconds, and included three different scenes. The animation was perfect, the sound effects brilliant. But now, of course, the bad news. At the end of each 15 second scene like this, the next stage is loaded from the disk - and that takes another 15 seconds. In the end, you are only really playing the game for half of the time. Unavoidable, but a trifle bothersome - and the best excuse yet for a hard disk on my Amiga.

Add the fact that Questor's Tim Allison says this is the most difficult game he has ever played, and you finish up with what must be called a long term challenge. So far, I have made it half way through Disk 2.

Dragon's Lair is truly remarkable certainly the most impressive home computer game I have ever seen. It sells for $89.95, which is reasonable for an Amiga game which fills six disks. Even if you cannot afford it, you owe it to yourself to see it - ask your local dealer for a demonstration.

For further information, phone Tim Allison at Questor on (02) 662 7944. ❑



Adventure of the year
Mortville Manor

Perhaps the most popular section of Australian Commodore and Amiga Review Magazine is Adventurer's Realm, our monthly rundown on what's new in the world of adventures. Adventure games stretch your mind - usually there are problems to solve, things to do, places to go. Often it's all in the mind - some of the best adventure games are "text only," with absolutely no graphics or sound effects. Some games, like our adventure of the year, go to the other extreme - sheer luxury. So here it is - Michael Spiteri's ADVENTURE OF THE YEAR ...

FOR THIS GAME we travel to a small town in France, back in the early Fifties, to unravel a compelling mystery.

You play the role of the French private eye Jerome Lange. You receive a letter from a childhood sweetheart, Julia Defranck, now an old woman. Apparently she is in great danger and asks you to meet her at her old manor. Within hours you pack your bag and head off to the infamous - Mortville Manor!

You are greeted by the faithful butler Max, who tells you that Julia has died. Her surviving family are all present at the manor. The storm is pretty bad outside, and you are invited to stay until it dies down, giving you the chance to try to solve the mystery of Julia's alarming note.

So, secretly and discreetly, you search the manor for clues, and try to interview the family members without making them suspicious. If you are caught too often poking your nose where it's not wanted or asking too many questions, you could find yourself sent packing home . . . or to your grave.

I've been playing this game for hours beyond end, and the plot seems to become more intricate and complex the further I progress. Why did Julia give everyone, except her husband and son, a special gift before she died? What is beyond the well in the garden? What is the mystery behind the recent engravings in the cellar? Why is the motto missing from the coat of arms? What is Eva's real occupation? Why won't Leo allow me to enter Julia's locked bedroom? These are just some of the many questions you'll find yourself asking.

The game is totally mouse driven, in *Deja Vu* style, however, *Mortville Manor* wipes the floor ten times over with *Deja Vu* in all areas. Crisp colour graphics depict every location in the game, as well as every object. You select a verb from the menu (and a good selection there is too!) and then point to something on the screen. The screen will graphically update itself. You call open all doors, cupboards and drawers and then search them, manipulating any objects you find - and believe me, there are quite a few! (With many red herrings thrown in too!).

A small box in the corner of the screen lists all the characters in the room. Watch out for sudden entrances! You can start up a conversation with any of these characters. This is where the game really gets clever. Once you select the character, an animated picture of him/her will be displayed. Then you ask it a question from the selection on the screen (which updates as you uncover more clues), and the character will actually reply to you using the Amiga's fantastic speech capabilities!

Not only that, but as the character talks, he/she has full facial expressions (frowning, smiling, winking etc). This really has to be seen to be believed.

The game features fantastic sound effects, some digitised, some not, ranging from the great theme music to the convincing sound of footsteps! This and the French accents of the characters increase atmosphere by 100%.

Slick presentation, good playability, pleasing graphics, unique characters, great atmosphere, good vocabulary and an absolutely compelling plot with a small touch of humour thrown in, to me, makes *Mortville Manor* the best adventure game to be released this year. Suitable for newcomers and veterans, this is very likely to become your favourite, as it has become mine. Go out and buy it now! ❑

The best for 89

SimCity

Here it is. Our favourite game. It's hard to describe - it doesn't fit neatly in any category. And who would have thought that a game where you get to play "town planner" would make it to the top?

SIM CITY IS MY choice for game of the year. It is unique - an absolutely brilliant piece of computer software.

More than a game, it is a simulated city. A living, breathing city, with traffic on the roads, with miniature houses and shops and factories and trains and boats and planes. And best of all, I am in charge. I am the mayor, I am the town planner - I am the guy who approves development applications. Quite simply, I can do whatever I choose with my simulated city. Even name it after myself.

There are a number of options - disaster management scenarios to play out, various cities to inspect, or perhaps a bit of genuine pioneering.

I decide to build my city from the ground up. I could have chosen to control a ready made version of Tokyo or San Francisco for a few decades, but I reckon there's nothing quite like that satisfying feeling that you built it yourself.

First, then, a few roads. I click on the "Roadworks" icon with my mouse, and move the pointer onto the main display. Roadways, complete with linemarking, are painted onto the screen as I move the pointer. This is easy - but at $10.00 a click, I need to keep an eye on my budget. Anything ambitious will have to wait until we attract a few more taxpayers.

Next, some residential zones. The method is the same; click on the icon, then on the main display. I arrange two blocks, one on either side of the main street. A commercial zone and an industrial zone complete stage one of the development.

Nothing will happen, however, until we connect the power supply. And before we can do that, we need a power station. I place it strategically, and lay cables to each block - point and click, just like building a road.

As the final connection is made, Philsville springs into life. Houses pop up like mushrooms,factories and shopping centres begin to appear in the industrial and commercial zones and tiny cars move back and forth on the streets. And this is just the beginning.

Planning is essential for good results. A special window displays maps and graphs with detailed demographic data - there are 12 map displays in all, from Traffic and Population Densities to Land values. Together with a series of graphs showing trends over time, they give you enough raw data to design exactly the city you want.

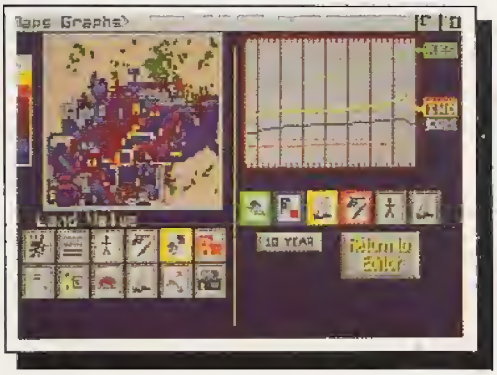
On the Amiga version, graphics are beautiful. A rich colour scheme brings the intricate details of the city to life. There are sound effects too, including digitised reports from the traffic helicopter.

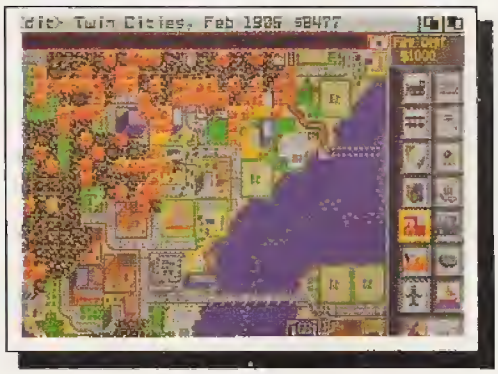
But that has to wait until you build an airport.

Sim City is simply a stunning game. My Amiga has been running for days at a time - Philsville has grown from a village of 800 people to a smallish city of 30,000. There have been some hard times - floods, fires and airline disasters - but we keep on bouncing back. After all, the people of Philsville love me. The last opinion poll gave me an approval rating of 83% - probably because I lowered the tax rate to 2%. Now that's my kind of city.

Priced at $69.95, *Sim City* is not cheap. You may have to sell off your train set to afford it. But when you think about the price of city real estate these days, the game is an absolute bargain. Seriously folks, I love it. This game is an essential addition to your software collection.

So congratulations go to Dataflow, distributors of the AMIGA ANNUAL GAME OF THE YEAR. For further information, call them on 02 331 3665. ❑





A3001

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Customise your Workbench

by Andrew Farrell

WORKBENCH, the place from which you launch applications, manage files and format disks, is one of Amiga's greatest strengths. It is strangely true that it is also Amiga's greatest weakness. What Amiga owners have come to appreciate as normal, many find the look and feel of to be a little on the toyish side.

But let not first impressions be your last. Workbench can be changed, given a major face-lift, upgraded and altered in many ways. Most other operating systems cannot be so haphazardly tampered with. It is usually all or nothing. Replace the whole show, or leave it as is.

I recently embarked on a serious quest for a better Workbench. Indeed, one is one the way from Commodore - version 1.4. Another, by the name of *Jazzbench*, boasts many of the features of 1.4. After testing it out thoroughly I discovered that, alas, it turned out to be merely a taste of the future, not a reliable alternative. Whilst being very powerful, *JazzBench* is decidedly bug-ridden at this early stage. Furthermore, it consumes vast amounts of memory.

So, I amassed together every one of the best Public Domain Workbench enhancements I could find. Small programs written by hackers to overcome some limitation they discovered. Slowly, I pieced them together on one disk. Some clashed, some proved to be unreliable, some were plain ugly. After three days' work I had narrowed the possibilities down considerably. All these programs were sourced from the amazing Fred Fish public domain disk collection listed in the back of this annual.

Now, my Workbench is a changed place. To make space for all the additions required I first deleted a lot of the utilities and unwanted tools, fonts, printer drivers and C commands. Next I installed *ARP version 1.3*. This is a special set of programs which replace many of the exisiting C commands with smaller, faster, easier to use assembly language equivalents. Next, I added the program *Dropcloth*. This enables you to display a pattern, 2-bit image or combination of both as a background to your work area. The intensity of the display may be varied - a mid way setting is best. With the pattern in place, the whole screen has a softer, dare I say more Macintosh look.

Wicon and *Dmouse* are odd sounding names for two of the best mouse utilities yet. The first enables you to make windows open up through a transitional series of boxes to give a true feeling that you have actually opened something. The number of boxes displayed during opening can be altered. The default setting of 15 is smooth, however three is a workable speed.

Iconification, a word indigenous to the Amiga world, is the ability to temporarily snap-shot a window and all it contains into an icon. For example, you open a disk containing numerous drawers, projects or tools. Floppy users will agree this can be a tiresome process. With *Wicon*, you still have to do it once. After that, just click anywhere in the window and it shrinks down into a small tag-like icon at the bottom left of the screen. A further click will reinstate the original display in an instant, with contents intact.

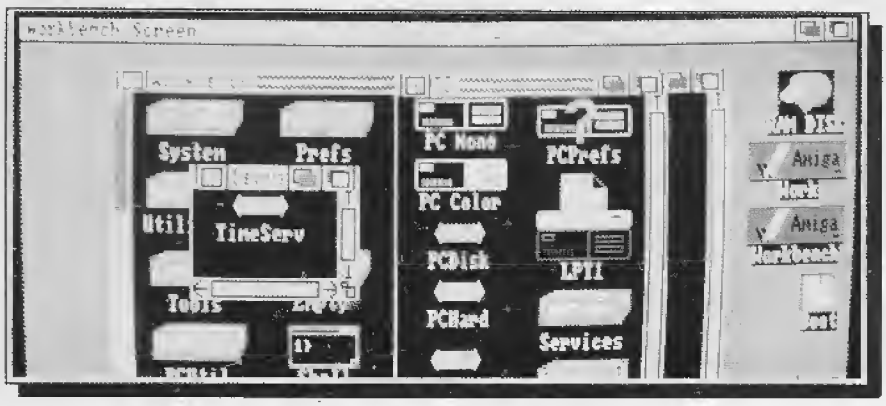
Dmouse livens up the mouse pointer considerably. The mouse becomes very sensitive to the slightest movement, which, once you get used to it, is much quicker to work with. As the pointer moves about the screen, the window underneath the current position becomes active, saving a good deal of unhealthy clicking. After a period of inactivity, the pointer disappears. If there is no keyboard activity, your screen will blank in a bid to reduce the chance of the monitor etching the current display into the phosphor. Many other functions are added, too numerous to mention, but all very worthwhile.

Next up was the addition of custom pull-down menus and hot-keys. Using *Mymenu*, you configure your own additions, which may be used to run either CLI or Workbench programs. Ideal for jumping into your favourite program without the need to open drawers and windows. That elusive CLI icon is also made redundant by a definable two-key stroke command to "pop-up" a CLI whenever you require.

With the startup-sequence set to run all these utilities along with several other friends such as *Diskmaster*, *Zippy* and *PopInfo*, my Amiga took on a whole new feeling. There are plenty of other programs out there you can add to your Workbench, including some fine clocks, calculators, and reminder programs.

All of these are free, or very cheap, thanks to the huge collection of public domain software available through user groups and various mail order houses for around $6 a disk. Some authors request a small donation be sent directly to them if you are especially impressed with their work - $15-20 is normal. This usually buys you direct support and some free upgrades. If only commercial software sold for ten times the price was so well supported.

If you would like a copy of the final Workbench disk compilation we use here at the *Amiga Annual*, please use the form on page 96. We think you'll be pretty happy with the improvements. (*ARP version 1.3* is on it too!) ❑



Using the custom Workbench

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Commodore

JSA COM 0424

Building your own RAM: Disk - or RAD: for serious users!

by Alexander Lambert

SINGLE DISK DRIVE users will find that a RAMDISK or RAD: device can save a lot of disk swapping, when using the DOS commands. If you have two drives, the RAMDISK or RAD: device allows you to look through directories on both the drives without the necessity for your workbench disk to be in a drive.

The RAMDISK and the RAD: device are pseudo electronic disk drives. Though they are electronic, the computer treats them as it would a mechanical/physical disk drive.

When you put information into a RAMDISK, the system sets aside a section of memory specifically for that purpose. This piece of memory is finite, and as such it limits the amount of information that can be placed into it.

Exceeding the capacity prompts the system to display the message RAM FULL or RAD FULL, just as DOS will inform the user when a floppy disk has exceeded its storage capacity. The system will adjust the allocated memory to accommodate for the amount of material placed into it. Because the system adjusts the size of the RAMDISK, the device does not use memory unnecessarily.

On the other hand, the device RAD: has its definition in a file called MOUNTLIST, contained in the DEVS directory. The user defines the amount of tracks (space) that RAD: will use, however just mounting RAD: will not use very much memory.

The icon for the Ramdisk appears on the workbench window as DOS executes the startup-sequence file, or when the operator, using the CLI refers to it by name, i.e. COPY FILENAME to RAM:

The system will also mount the RAD: device as DOS executes the Startup-Sequence file providing the command to mount it is in the startup file. The icon will then appear on the workbench screen.

The important difference between the RAMDISK and RAD: is painfully obvious when the system crashes, or the user does a system reset. All the information in a ramdisk will be lost, whereas RAD: will retain the information until the user switches off the computer, or removes the device. It is up to the user which device to use. If the information is of an important nature, and losing it would cause the operator to have a heart flutter, or worse, then use RAD and keep the information safe.

If the files are temporary, like DOS commands, then use the RAMDISK. Some word processors will automatically make a backup copy of the current document, and the user can inform the processor to place the backups into Rad at set intervals. This is a real life saver incase the system locks up, because you can retrieve most of the document, depending on the interval between backups.

I lost three hours of typing because I became complaisant, and did not use the options readily available in the system, a very painful lesson to learn. I cannot tell you exactly how you should use your system, but I can give you some ideas, and it is up to you how they are put to use.

Why use a RAM: Disk

- By placing the constantly used DOS commands into a RAMDISK or RAD: any amount of file manipulation can take place, without the need to have the system disk in the drive. Although the user with two drives can issue any DOS commands to the external drive, it is still useful to have the commands in the computer's memory, allowing both drives to function as "work drives."

Providing your computer has plenty of memory, the whole contents of the "C directory" can comfortably fit into the RAMDISK or the RAD device, and all the DOS commands will be at your finger tips. When the DOS commands are in memory accessing the system disk is not necessary, and the speed increase is very significant.

Although it is possible to make the "C" files resident, the files must be PURE to work correctly, but with RAM: and RAD: any files can be used. It is an easy matter to build a RAMDISK, just type in the commands as you see them in the example.

```
EXAMPLE:    MAKEDIR RAM:C
            COPY C/# RAM:C
          CD RAM:C
          ASSIGN C: RAM:C
```

An alternative is to use the device RAD:

```
EXAMPLE:    MOUNT RAD:
            MAKEDIR RAD:C
          COPY C/# RAD:C
          CD RAD:C
          ASSIGN C: RAD:C
```

Remove the workbench disk and insert the free-disk or any disk you want to look at. Now type DIR or LIST and DOS displays the contents of the disk on your screen. The DOS commands are in RAM: (the computer's memory) so there is no need to have the workbench disk in your drive. If you wanted to send a copy of a file to a printer, the system would still ask for workbench, because DOS needs to load the printer driver. Sometimes there maybe a call for FONTS, or a file from the LIBS directory, this is not a problem, just follow the system prompts. In the example above, you have built a RAMDISK allowing you access to all the "C" files without reference to workbench, resulting in fewer disk swaps, but it uses more memory space than necessary.

A much better approach is copying only the commands the user needs into RAM. This uses less memory, but typing each command into RAM: every time you switch on the computer, is boring and time consuming. A simpler and more productive way is to construct an executable file that does the work for you.

You do this by constructing an executable file in an editor, and saving it in the "S" directory on your copy of workbench. Regardless of what type of editor you use just remember to save the file as text only, not as a document. Run the editor of your choice, and type the file in the next example.

The Filename is; RAM! (the exclamation is part of the filename)

```
MAKE DIR RAM:C
COPY C RAM:C
```

```
CD RAM:C
COPY C/INFO RAM:C
COPY C/ASSIGN RAM:C
COPY C/ECHO RAM:C
COPY C/CD RAM:C
COPY C/DIR RAM:C
COPY C/TYPE RAM:C
COPY C/LIST RAM:C
COPY C/DELETE RAM:C
COPY C/RENAME RAM:C
COPY C/RELABEL RAM:C
ASSIGN C: RAM:C
ECHO ""
ECHO      "TASK COMPLETED"
ECHO ""
```

Now select the "save as" option on your editor and save the file like this;

EXAMPLE: (save as) DF0:S/RAM!

The file you have written should in the "S" directory, with the name RAM! Using the file is as easy as typing into the CLI the command line;

EXECUTE S/RAM!

That's all there is to it, now you may remove the system disk, and replace it with any disk you want to view or copy files to. You can remove a file, make a new directory, change the name of a directory or file, relabel a disk, you can do anything you want to the disk, so long as the DOS commands you use are in the ramdisk.

You can edit the "RAM!" file, to add more commands, or delete others you find unnecessary. When you are using the RAMDISK and find you need an extra command, add it to RAM: by inserting a disk that contains the command you want, and type in the CLI;

COPY VOLUMENAME:DIRECTORYNAME/ FILENAME to RAM:C

Where "volumename" is the name of the disk, and "directoryname" is the directory containing the wanted file. If you have an external drive use the command line;

COPY DF0:C/FILENAME RAM:C

By using the PROTECT command you can set the script bit and save yourself the trouble of typing the EXECUTE command.

EXAMPLE: PROTECT S/RAM! +S ADD

This has shortened the command line to S/RAM!. If you are keen on making the typing as little as possible you can add the PATH for the "S directory" if it hasn't already been done. This in effect will shorten the command line to RAM!.

Using the RAD DEVICE: is very similar, though in the example to follow the file is more complex than the RAMDISK file. You may simplify the file for your own use, but it works well the way it is. I added the extra commands to show how you use them in an executable file.

The file RAD! gives you the choice of either a RAMDISK OR RAD: DEVICE by specifying the device name. Type the file into your editor the same way you did the RAMDISK file.

The Filename is RAD!

```
.KEY DEVICE
C/ECHO ""
IF "<DEVICE>" EQ ""
C/ECHO "     PLEASE SPECIFY TYPE OF
STORAGE DEVICE"
C/ECHO ""
C/ECHO "          TRY AGAIN"
QUIT
ENDIF
C/ECHO ""
IF <DEVICE> EQ RAD
C/ECHO "     PLACING FILES INTO RAD
DEVICE"
MOUNT <DEVICE>:
ENDIF
C/ECHO ""
IF <DEVICE> EQ RAM
C/ECHO "     BUILDING RAMDISK AT YOUR
REQUEST"
ENDIF
IF NOT EXISTS <DEVICE>:C
MAKEDIR <DEVICE>:C
ENDIF
COPY C/INFO <DEVICE>:C COPY
C/ASSIGN <DEVICE>:C
COPY C/ECHO <DEVICE>:C
COPY C/CD <DEVICE>:C
COPY C/COPY <DEVICE>:C
COPY C/DIR <DEVICE>:C
COPY C/TYPE <DEVICE>:C
COPY C/LIST <DEVICE>:C
COPY C/DELETE <DEVICE>:C
COPY C/RENAME <DEVICE>:C
COPY C/RELABEL <DEVICE>:C ASSIGN C:
<DEVICE>:C
CD <DEVICE>:C
ECHO ""
ECHO "     TASK COMPLETED"
ECHO ""
```

Select the "save as" option on your editor and save the file to your workbench disk like this;

EXAMPLE: (save as) DF0:S/RAD!

Don't forget the exclamation mark after RAD as it is part of the file name. When using the file the operator has the choice of a temporary RAMDISK or the RAD device, just by typing in its name on the command line, like this;

EXAMPLE: EXECUTE RAD! RAD

This will execute the file RAD! using the device RAD: When the word RAM is used after the filename, like this;

EXAMPLE EXECUTE RAD! RAM

A RAMDISK is used for the commands from the "C directory" and as such the RAMDISK is only temporary. If you do not specify the device, a message will inform you to try again.

You may have already realized the above files can made resident when using AmigaShell. The difference is that a lot of files in your resident list will consume memory whereas the RAD: or RAMDISK may be executed only when it's needed. Once you have completed your task the files can be removed from RAM: or rad: giving you back that much needed memory space.

I must emphasize, the files shown here are just some of the many ways you can tackle a task. The idea is to show you some of the possibilities. After gaining a basic understanding on the construction of executable files, you can build files to suit almost any purpose.

Plenty of practice and experimentation builds confidence for the new user and that's another reason I suggest experimenting with the files. I don't want the reader to think the files can't benefit by modification. They are only examples, and though they work OK, with experimentation you can find ways to improve them. Take a look how many times the command COPY is used, an improvement can be made by making the COPY command resident, the file will then execute much faster.

I mentioned earlier that using the RESIDENT command produces similar results, this is true, but it is not the same as using a RAMDISK or RAD device, because you can only use RESIDENT when using AMIGASHELL.

You can type a file into an editor and produce a batch file that loads different commands into the resident list, making them immediately available to the system. The file is then stored in the "S" directory, and executed when the user finds a need for it. Providing the file is PURE, the effect is much the same as using the RAMDISK or RAD: device. A problem arises when you try to add files to the resident list that are not PURE. By placing those files into RAD: or RAM: can save you a possible visit from the dreaded GURU. ❑

User Groups

You'll find times and locations of meetings mentioned in the following list wherever possible. However, we suggest you confirm details before going, as they often change.

NSW

Ace User Group
P.O.Box 938
Bankstown N.S.W. 2200

Albury-Wodonga
David Willis
Last Monday of the month
P.O.Box 1014
Albury 2640

Armidale (N.S.W) Amiga User Group
Barry Hopkins (076) 730250

Australia Amiga Users Associations
Mr Ron Carruthers
(047)588006 (02)3577027
P.O.Box 389
Penrith N.S.W. 2750

Burwood Amiga User Group
Peter Anderson (02) 6271596
2nd Mondays of each month

Commodore Hornsby User Group Inc.
Robyn Sparrowhawk, Sec.
02 871 3409 or 02 484 6483
4th Wednesday each month
P.O. Box 1578
Hornsby Northgate 2077

Cooma Amiga User Group
Randall Crook
(064) 522493
3rd Wednesday of every month
P.O.Box 409, Cooma 2630

East Coast Amiga Users Group
Jeff Campbell
(043)418140

Goulburn Amiga Owners Group
Rob Wilkins (048) 442251
1st Wednesday of the month

ACT

Canberra Amiga Users Society
36 Ambalindum St
Hawker ACT 2614

VIC

Amiga Users Group
Bohdan Ferens (03) 7923918
2nd Sunday of the month

Commodore Amiga Users Group
Frank Martin
P.O.Box 64
Abbotsford Vic 3067

Shepparton Amiga Users Group SAUG
Dale Anwyl
P.O. Box 1162
Shepparton Vic 3630

QLD

Amiga User Group Rockhampton
John Olsen
(079) 344228 (AH)

Brisbane Amiga Users Group
Peter Goed (07) 8801136
P.O.Box 853
Toowong Qld 4066

Commodore Computer Users Group Inc.
Norm Chambers
(07) 3412799
P.O.Box 274
Springwood Qld 4127

Gladstone Amiga User Group
Scott Hamilton
P.O.Box 139
Gladstone Qld 4680

Mermaid (Business) Users Group(s)
Ron Perry
Every Thurs., 7.15
22 Maureen Court
Broadbeach Waters 4218

Mount Isa Amiga Users Group
C/o 147 Fourth Avenue
Mount Isa 4825

Reef Amigans - Amiga User Groups
Adam Horn
WK; 817541 HM; 79489
2nd Wednesday of each month
P.O.Box 988
Aitkenvale Qld 4814

SA

Amiga Users Group of Sth Aust.
Wayne Edge (08) 276882
P.O.Box 486
Glenside SA 5064

Whyalla Commodore Users Group
J. Groffen (President)
086 45 0989 or 086 49 3078
1st & 3rd Tues. 7.30pm

NT

Amiga Users of Northern Territory
Stuart Park
C/o 4/4 Armidale Street
NT 5790

WA

Amiga Users Group of WA (AUGWA)
Alex Lambert (09) 3312601
2nd Tuesday every month

Commodore Computer User Group
Wayne Dustman
09 4485005
2nd & 4th Wednesdays of each month

Foothills Commodore User Group
John Cherry/Arthur Holstein
09 453 2431/09 454 5377
Thursday night 7- 9.30 p.m.
C/ 28 Fagin Way
Forrestfield 6058

Kalamiga User Group
Shannon O'Rourke
7 Norm St
Walliston WA 6076

VicChips Computer User Group (Inc)
W. R. Tentori - Secretary
Every Tues., Malibu School
P.O. Box 540
Rockingham 6168

Waite Amiga Users
C/o Curtin University
14 Colonial Drive
Bibra Lake WA 6163

TAS

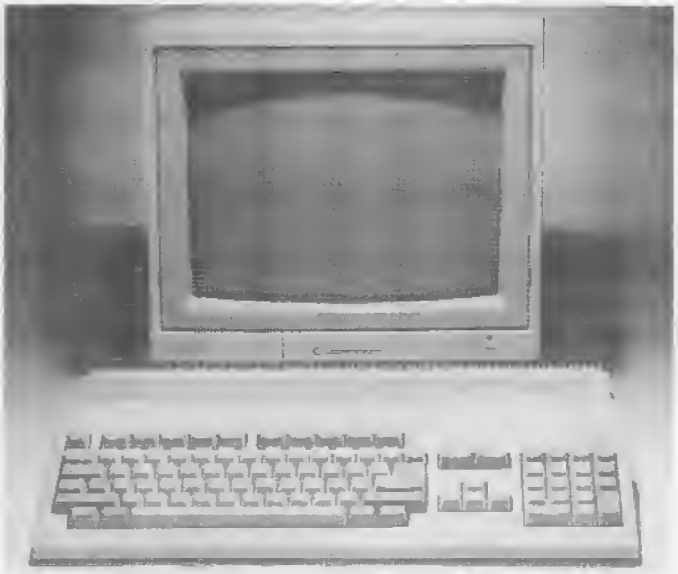
Tasmanian Commodore Users Assoc.
David Pockett
(004) 344 288 (bus)
Ring for times
G.P.O. Box 673, Hobart
Tas 7001
67 Sycamore Road, Ridson Vale 7036

New Zealand

Bay Amiga Club
Jonathan Clarke
070 358715
P.O.Box 959
Hastings New Zealand

New Zealand Amiga Users Group
Roger Manson
4039657
22 Ellice Road, Auckland
New Zealand

IF YOU'VE BEEN CLEVER ENOUGH TO BUY THE WORLD'S SMARTEST COMPUTER, JOIN THE CLUB.



MEMBERSHIP OPEN TO: COMPANIES, INDIVIDUALS, AMIGA USER GROUPS, SCHOOLS AND TERTIARY INSTITUTIONS.

By choosing an Amiga, you've already put yourself one step ahead of the average computer owner.

Because the Amiga is so much more advanced than the conventional PC, it's like comparing an old fashioned record player to a compact disc system.

In fact, part of the fascination of owning an Amiga is that we're still finding out how far we can push it.

Exciting new programs and applications are being developed all the time as we explore the Amiga's outstanding computing and graphic capabilities. That's why you'll find membership to Club Amiga so rewarding. You'll receive a Commodore Amiga Review each month and the Commodore Amiga Review annual to keep you informed of the latest developments in Amiga applications and software.

You'll also be receiving a regular Club Amiga newsletter to keep you up to date with the latest developments.

In fact, if you join Club Amiga right now, you will receive, at no extra charge, an exciting software package worth $99.

That's worth more than half your membership fee already! That's just one of the ways Club Amiga will help you get the most from your Amiga system.

So why not do the smartest thing since buying an Amiga. And join the Club!

BONUS GIFT

Join Club Amiga now and receive a Textcraft Plus or Graphicraft program at no extra charge. (Each program normally retails for $89.)

Membership includes one year's subscription to Commodore Amiga Review and Commodore Amiga Review Annual, newsstand value over $42.

SUBSCRIBE NOW AND CLAIM YOUR BONUS.
CLUB AMIGA MEMBERSHIP APPLICATION FORM

Name: _____

Address: _____

_____ P/code: _____

Ph. No.: _____

Male ☐ Female ☐

Age: Up to 18 ☐ to 25 ☐
26 to 34 ☐ 35 to 49 ☐ Over 50 ☐

Married ☐ Single ☐

Children 0 ☐ 1-2 ☐ 3+ ☐

Occupation: _____

Is your Amiga used mainly for
Business ☐ Pleasure ☐

Bonus offer "Selection: Textcraft ☐
Graphicraft ☐ Neither ☐

Club Membership Joining Fee $50.00.
Annual Subscription $130.00.

Yes, I would like to become a member of Club Amiga.

I enclose my cheque for $180.00 and agree to be bound by the terms and conditions of membership to Club Amiga.

I authorise Commodore Computers to debit my ☐ Bankcard ☐ MasterCard account for the amount of $180.00.

My card number is

Signature: _____

Expiry Date: _____

I understand I should receive my CLUB AMIGA membership package within 4 weeks.

Signature: _____

Date: ___ / ___ / ___

Send to: Club Amiga, 67 Mars Road LANE COVE NSW 2066

CLUB AMIGA™
BY COMMODORE

JSA COM0383

The Amiga Annual 1990 Software Guide

including some hardware

SOFTWARE AVAILABILITY IS always a sore point with new computer owners. Well, here's a list of all the titles we found available in Australia. Your local computer store should be able to order in the product you're after. A code for the distributor or importer is listed with each program along with the current recommended retail price. Prices often change from store to store - and as new versions of products are released.

Your dealer can contact the distributors using the details at the end of the listing. Distributors are often helpful too if you require further product information which your dealer cannot help you with.

Be sure to check the amount of memory required. Also, with graphics program, ensure you get the PAL version. Some graphics programs are released with different versions for NTSC and PAL screens. The NTSC version, especially for the smaller American display screens, will not be able to display images in the full screen area of Australian systems - a small black bar across the bottom about 1/6th the monitor height is common.

We have not listed any entertainment titles - these come and go so quickly that it's just impossible to keep up to date! For a run-down on the better titles over the past year, see the entertainment section in this Annual by Phil Campbell.

Recommended retail prices and availability are based on information supplied by those distributors who responded to our enquiries. The distributor listed is not necessarily the only or the exclusive distributor of that product.

Accounting

B.E.S.T.
Integrated accounting, mouse driven, automatic posting Includes inventory, services, accounts receivable and payable and general ledger.
BES $495.00

Cash Register
Point of sale, inventory, drawer reconciliation, daily reports, printed output.
CMA $179.00

Desktop Budget
Home/small office accounting. Icon driven, online calculator, setup monthly payments, monthend reconciliations, yearend rollover.
ITT $69.95

Easy Checks
Cheque book budgeting, multiple accounts, balance, general. Printed reports.
CMA $89.00

Easy Ledgers
Fully integrated accounting system, sales, purchases, inventory and general ledger. Familiar bookkeeping interface. Point and click.
SYB $0.00

Electronic Cashbook
Handles 5 separate banking sections, 15 Periodical Payments, 245 User Dissections, Audit Trial Facility, Manual/Batch Reconciliations.
CMT $179.00

Electronic Debtors
Accounts Receivable package, ported from MSDOS environment.
CMT $249.00

Financial Cookbook
Software recipe book for success. Offers 32 financial calculation "recipes" that contain formulas that produce answers about taxes, investment, savings, etc.
ECP $27.95

Financial PLUS
Integrated accounts, general ledger, payable, receivable, payroll and word processing.
CMA $649.00

Home Accounts
60 expenditure/10 income accounts, detailed statements for any range of months, monthly reports, budget cash flow forecasts, actual/budget comparison and more.
PAC $89.95

MiAmiga Ledger
General ledger, accounts receivable, payable. Double entry, general ledger system. For home and small business.
CMA 199.00

Money Mentor
30 Accounts, transactions, balances, projects and budgets expenses. Alerts user to exceeded budget or negative balance.
CMA 189.00

Par Home 1
Checkbook and budgeting, personal financial planning and management.
CMA $89.00

Par Real 1
Real Estate manager, income management, property analysis, and reports. Professional level package that also incorporates most aspects of creative financing.
CMA $249.00

Paymaster PLUS
Payroll multiple structures, tax scales. Printed reports.
CMA $249.00

Phasar V3.0
Financial record keeping program. Savings and loan analysis, budget reports, projects and prepares income taxes. Full documentation.
CMT $129.00

S.B.A. Cash
Accounting software
CMT 149.00

S.B.A. Xtra
Accounting software.
CMT 199.00

Animation

Animagic Aegis
Editing program for ANIM files to produce video style special effects, fades, wipes, dissolves, twists, turns, zooms, etc.
ITT 119.00

Animate 3D
3D animation module (v1.216). Extended modelling and animation upgrade module for Sculpt 3D. Provides splines, animation hierachy, tweening etc.
CMT 209.00

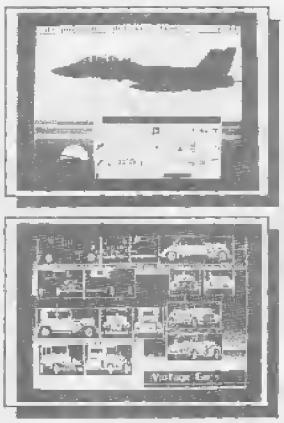
Animation: Flipper
Computer animators 'penciltest'. Preview 'cel' animations. Animates a series of IFF pictures or 'cels' as consecutive frames. Saved in Hash 'ANIM' format.
CMT 89.00

Animation: Rotoscope
Edit single frames of animation, load background, draw on independent overlay. 2D animation.
CMT 119.00

Animation: Stand
Provides rostrum camera like effects zoom in and out and pan across any IFF picture. Compressed animation saved in Hash 'ANIM' format.
CMT 89.95

Animator Apprentice Jnr.
CMA 135.00

Animator Images Aegis



Aegis Animator + Clip Art

Bitmap animator with 'morph' tweening. The original 2D animator, bundled with Aegis Images. Tweening, cut and paste screens, only NTSC.
ITT 119.00

Animator: Apprentice
'Organic' animation system (v3.0). Objects are constructed using simple 'primitive' 3D shapes, then surface detail and texture is mapped on from paint images
CMT 399.00

Caligari
Solid object generation, faceted/smooth shading, 4,096 simultaneous colours, 704 x 460 pixel resolution, 2Mb memory req, coprocessor supp, single frame controller.
CMT 2795.00

Deluxe Photolab
HAM painting and image processing. Handles poster size images. Three programs in one.
ECP 209.95

Elan Performer
Control of imagery and animation in paint/animation programs using RIFF and ANIM formats. Assign imagery/ animation to keys, call to screen with a keystroke.
CMT 84.95

Express Paint III
Graphics, b/w and colour PostScript, 24pin dot matrix, virtual memory, text importing, 3D perspective, unlim ited undos & redos, 64 colour extra halfbrite & more.
PAC $199.00

Fantavision
2D animation. Output to video with professional results.

DFL 89.95

Gallery 3D
CMT 99.00

Graphics Starter Kit Aegis
Entry level animation package including Images, Draw, Artpak, Animator.
ITT 119.00

Images Aegis
Bitmap paint system. With Deluxe Paint, one of the two original paint programs for the Amiga. This one has not progressed, bundled free with Animator.
ITT 49.95

Media Line Animation Backgrounds Disk
Backgrounds for incorporation into animation packages. Available in either NTSC or PAL. 32 different colour animations.
CMT 49.95

Moviesetter
WYSIWYG animation package. Offers full pallete control for up to 32 colors, color cycling, speeds up to 60 frames per second.
ITT 99.95

Professional Draw
Structured graphics program with assorted geometric/ freehand drawing tools. Includes reflection, rotation and distortion tools with full text capability. WYSIWYG
ITT 199.95

ProMotion Aegis
ITT 79.95

Sculpt Animate 4D Junior
Introduction to 3D modelling.
CMT 229.00

Sculpt Interior Design Disk
3D object library for use with Sculpt/Animate.
CMT 44.95

Silver
3D animation, combines raytracing with animation.
CMA 79.95

The Director
Animation sequencer. Allows mixing of IFF stills, sounds, instruments and ANIM animations.
CMT 99.00

The Director Toolkit
New wipe routines, enhanced Blit utility, screen save from Director scripts, MIDI input module, standard ANIM compressor, pie chart generator, sine and cosine.
CMT 59.95

Videoscape 3D Aegis
Creates complex 3D animations.
ITT 239.00

Videoscape Architecture Design Disk
CMT 44.95

Videoscape Future Design Disk
CMT 44.95

Videoscape Human Design Disk
CMT 44.95

Videoscape Interior Design Disk
CMT 44.95

Videoscape Microbot Design Disk
CMT 44.95

Zoetrope
Animation package including 2D "Cel" animation, delta file compression, layering drawings, powerful painting tools and text manipulation. NTSC only display.
CMT 169.00

Books

40 Great FSII Adventures
Pretested flight plans and views of FSII scenery. Hours of flying.
CMA 24.95

40 More Great FSII Adventures
More pretested flight plans and scenery.
CMA 24.95

68000 Assembly Language
A must for budding 68000 programmers.
CMA 49.95

Advanced AmigaBASIC
Comprehensive guide to BASIC programming with extensive emphasis on graphics.
CMT 34.95

Amiga 3-D Graphic Programming in Basic
Details techniques and algorithms for generating 3-D graphics.
PAC $49.95

Amiga 3-D Graphic Programming in Basic Supplementary Disk
PAC $19.95

Amiga 3D Graphics Programming
CMT 39.95

Amiga 3D Graphics Programming Disk
CMT 29.95

Amiga Applications
CMT 29.95

Amiga Basic Inside and Out
Lots of detail, all Basic commands, example programs to type in.
PAC $49.95

Amiga Basic Inside and Out Supplementary Disk
PAC $19.95

Amiga Assembly Language Programming
Learn 68000 Assembly Language.
CMT $29.95

Amiga C for Advanced Programmers
How compilers/assemblers/ linkers work, designing/ programming user friendly interfaces with intuition, combining assembly language and C codes. Includes source.
PAC $69.95

Amiga C for Advanced Programmers Supplementary Disk
PAC $19.95

Amiga C for Beginners
Explains C in plain English using examples. Includes beginners overview, special features of C, important routines, input/output in C, tricks and tips and more
PAC 49.95

Amiga C for Beginners Supplementary Disk
PAC 19.95

Amiga Computing Intl.
U.K magazine. Plenty of colour.
CMT 10.95

Amiga Disk Drives Inside & Out
Speed up data transfer, how copy protection works, computer viruses, Workbench and the CLI DOS functions, loading, saving, sequential/ random file organisation.
PAC 49.95

Amiga Disk Drives Inside & Out Supplementary Disk
PAC 19.95

Amiga DOS Manual
Guide to the CLI. Essential for the serious user.
CMT 44.95

Amiga for Beginners
Introduction to intuition, the mouse, windows, the CLI, and Amiga BASIC.
PAC 39.95

Amiga Graphics Inside & Out
Comprehensive guide, examples for AmigaBASIC and C languages.
PAC $49.95

Amiga Graphics Inside & Out Supplementary Disk
PAC $19.95

Amiga Guide to Graphics & Sound
CMT 34.95

Amiga Hardware Reference Manual

CMA 49.95

Amiga Intuition Reference Manual
CMA 49.95

Amiga Mach. Lang. Prog. Guide (C)
CMT 34.95

Amiga Machine Code
Introduction to 68000 assembler machine language pro gramming, covers 68000 microprocessor address modes and architecture, speech and sound.
PAC49.95

Amiga Machine Code Supplementary Disk
PAC 19.95

Amiga More Tricks & Tips
A compilation of various hints and tips for Workbench, CLI and especially BASIC users.
PAC $49.95

Amiga More Tricks & Tips Supplementary Disk
PAC 19.95

Amiga Programmers Guide (C)
CMT 39.95

Amiga Programmers Handbook Vol. 1.
CMT 44.95

Amiga Programmers Handbook Vol. 2.
CMT 44.95

Amiga ROM Kernal Reference
Essential for the serious C programmer.
CMT 59.95

Amiga System Programmers Guide
Covers EXEC structure, I/O requests, interrupts and resource management, multitasking functions.
PAC 69.95

Amiga System Programmers Guide Supplementary Disk
PAC19.95

Amiga Tricks & Tips
Tips on accessing libraries from BASIC, custom character sets, AmigaDOS, sound, important 68000 memory locations.
PAC 49.95

Amiga Tricks & Tips Supplementary Disk
PAC 19.95

Amiga Virus Toolbox & Manual
120 page manual explaining viruses together with software containing several actual virus-prevention programs.
PAC $89.95

AmigaBASIC Inside & Out
Describes every AmigaBASIC command, includes charts, windows, pull down menus, files, mouse and speech commands.
PAC 49.95

AmigaBASIC Inside & Out Disk
PAC 19.95

AmigaDOS Inside & Out
Internal design to practical applications of AmigaDOS Includes reference section, tasks and handling, DOS editors ED and EDIT, create and use script files.
PAC 49.95

AmigaDOS Inside & Out Supplementary Disk
PAC 19.95

AmigaDOS Quick Reference Guide
Easy-to-use reference tool. Indexes to find commands. Includes Workbench 1.3
PAC 19.95

Becoming an Amiga Artist
CMT 34.95

Beginners Guide to Amiga
CMA 39.95

Computer Animation
CMA 49.95

Computer Viruses: a hightech disease.
Describes computer viruses, how they work, protecting your computer, designing virus proof systems.
PAC 29.95

Desktop Video
CMT 34.95

Easy Guide to Word Perfect
CMT 24.95

Elementary ABASIC
CMA 35.95

First Book of Amiga
CMT 29.95

Flying Flight Simulator
CMA 29.00

Graphics and Sound
ECP 19.95

Inside Amiga with C
CMT 44.95

Inside AmigaBASIC
CMA 0.00

Inside AmigaBASIC disk
CMA 0.00

Kids and the Amiga
CMT 29.95

Leisure Suit Larry Hint Book
OZI 13.95

Modula 2 Programming
Contains a supplemental linker to produce your own devices for Amiga libraries. The discs are full of helpful example codes and has a 350 page manual.
CMT 24.95

Postscript Language Tutorial
CMA 35.95

Postscript Language Reference
Learn to program your laser printer for desktop publishing.
CMA 49.95

Programmers Guide to the Amiga (S)
CMT 44.95

ROM Kernal Exec Manual
CMA 49.95

ROM Kernel Libraries and Devices
CMA 89.00

Second Book of Amiga
CMT 29.95

Second Book of Machine Language
CMT 29.95

The Amiga Book
CMA 44.95

The Amiga Companion
Comprehensive guide to AmigaDOS and the CLI.
CMT 44.95

The Art of Desktop Publishing
CMT 34.95

The Complete Desktop

Publisher
CMT 49.95

The Creative Printmaster
CMT 24.95

Word Perfect Expert Advisor
CMT 49.95

CAD

ACAD Translator
Allows translation of Autocad DXF files to Sculpt Animate format, also Autocad files as raytraced images.
CMT 289.00

CAD Parts for Intro CAD
CMT 44.95

Draw
Structured drawing.
ITT 99.95

Draw 2000 Aegis
Structured drawing package. Latest version of Aegis medium level design program. Export files to Modeller 3D. Slow in operation with a large drawing.
ITT 339.00

Dynamic CAD
2 dimensional CAD system with isometric capabilities that can be combined with printers, plotters and digitizers.
QUE 679.95

Homebuilders CAD
CMT 259.00

IntroCAD
Introductory CAD system.
CMT 119.00

Logic Works V2.0
Digital circuit design aid. Full CAD functions, 30 ft x 30 ft page, symbol library, cut and paste.

CMA 189.00

XCAD Designer
Automatic/user definable menus, supports standard pen plotters/dot matrix printers/ external digitizer, auto dimensioning, Draw Plus files compatible. Multitasks
CMT 299.00

Communications

Amiga Term
Enables communication with other computers. Can display 132 columns of text without scrolling and give simple VT52/VT100 terminal emulation, supports Hayes.
CBM 99.00

Diga!
Diga! combines sophisticated terminal emulation and telecommunications into one powerful software system.
CMT 109.00

GP Term
Australian designed communications package with full local support and upgrades available. Handles Video text and ASCII. All BAUD rates, past 2400 clips dwnlds
GPT 99.00

OnLine! Platinum
Terminal program allowing interaction of micros and mainframes to enable users to exchange information, news and data.
CMT 179.00

Databases

Acquisition V1.3F
Allows both relational/ hierarchial filing structures or a combination, handles up to 16 files in one application, C, Pascal, BASIC & dBase compatible.
CBM 599.00

Data Retrieve
Use keyboard shortcuts or pulldown menus, uses screen masks with text styles, fonts, colours and graphics.
PAC 99.00

Mailshot Plus
WYSIWYG, fully menu driven, detection of duplicates, main file and subset, 'Marker' facility for searching/ sorting, conditional searching, merge file facility.
PAC $99.00

Miamiga File
Presents databeses in both list and form formats. Sorting and selection capabilities also provided. Up to 32 levels of progressive sorting are supported.
CMA 199.00

Microfiche Filer Plus
Organize, arrange and manipulate graphics, text and numbers.
CMT 249.00

Omega File
Database and mail merge program. Features include full screen editing, 2000 characters per field, 256 fields per record, 5000 characters per record, math fields.
CMA 179.00

Organise!
Create a custom filing system for organizing business records, contact lists. Up to 128 fields per form and 254 bytes per field. Now bundled with The Works!
OZI 132.95

Professional Dataretrieve
Fully relational database, programmable. Featuring up to 8 files that can be edited simultaneously. Create or edit onscreen masks for one or many files.
PAC 299.00

Superbase Personal
Fully multifile relational power, VCR style control panel, 3 ways of viewing data, setup and change file definitions quickly, include images/sound/text.
OZI 176.95

Superbase Professional
Database management language, over 250 high level commands. Report generator, Intelligent Forms Editor, extensive programmable telecommunications facilities.
OZI 615.00

Surgeon
Doityourself dismembering.
CMA 99.00

The Securities Analyst
Stock charting and analysis program for individual investors.
CMT 89.95

Who! What! When! Where!
Phone book and calendar. Unlimited search capabilities clear displays and printout options.
CMT 149.00

Desktop Publishing

Art Companion
CMA 55.00

Award Maker Education Library
CMT 49.95

Award Maker Plus
Includes nearly 300 different award and certificate styles and allows you to insert your own graphics. A variety of borders and ability to create name files.
CMT 69.95

Award Maker Sports Library
CMT 49.95

Bannerband
Quality computer paper on 45' rolls, 1/2" micro perf margins, no cross perforations. Produce banners, signs, spreadsheets, calendars, giant graphics.
CMT 0.00

City Desk V2.0 (PAL) Amiga
Save default even and odd pages as templates, auto matic document flow as necessary, automatic hyphenation.

Virtual rewrite of carlier version.
CMT 279.00

ComicArt Funny Figures
Clip art designed to be used with ComicSetter. Funny Figures cartoon characters and props in various orientations and poses.
ITT 34.95

ComicArt Science Fiction
Clip art designed to be used with ComicSetter. Science Fiction characters and props in various orientations and poses.
ITT 34.95

ComicArt Super Heroes
Clip art designed to be used with ComicSetter. Super Hero cartoon characters and props in various orientations and poses.
ITT 34.95

ComicSetter
Colour Desktop Publishing for comics lovers. Object oriented interface, selection of clip art, import objects from IFF paint package or clip art.
ITT 99.95

Deluxe Print II
Assorted stationary, banners, cards etc.
ECP 164.95

Fantasy Fonts for Printmaster
CMT 44.95

Fast Fonts
Font generator, works with most software, creates fonts in different sizes and styles.
CMT 59.95

Fonts & Borders for Printmaster
CMT 49.95

LaserScript
Reads Pagesetter files and converts to PostScript. Works with any Apple, T, I. or PostScript printer. PostScript driver.
ITT 44.95

PageSetter
Basic DTP system.
ITT 99.95

Page Stream
Variety in publishing programs such as color separation, rotation of text and graphics, text formatting and manipulation options.
CMT 259.00

PixelScript
Print PostScript files on your preferred printer.
CMT 199.00

Printmaster Art Gallery I & II
DFL $50.95

Printmaster Plus
Create your own banners, greeting cards, posters, signs, stationery. etc. Over 120 graphics and background patterns, eight fonts, 11 border designs. Many printers and interfaces supported.
DFL $59.95

Professional Page 1.3
Uses AGFA Compugraphic fonts for a professional quality type. Precision typography, unparalled graphic control and color separation are featured.
ITT 395.00

Professional Page Templates
ITT 59.95

Publisher Plus
Updated Publisher 1000. Many new features.
WYSIWYG. Entry level DTP
PAC 135.00

Shakespeare V1.1
Colour desktop publishing.
CMA 370.00

Desktop Video

Broadcast Titler
2160 x 1440 effective res, displays multiple IFF pictures and colour fonts, accepts popular Amiga and colour fonts. Full 736 x 480 overscan, 4096 palette.
CMT 489.00

Deluxe Productions (NTSC)
Full hires presentation and animated titling package. Smooth transitions, moves and wipes. NTSC only.
ECP 209.95

Deluxe Video V 1.2
Complex but comprehensive bitmap animation and titling system. Limited by complexity and 16 colours.
ECP 164.95

DigiView GOLD (PAL)
A500/2000. Digitize res modes from 320 x 200 up to 768 x 480, 2 4096 colour, enhanced HAM, 100% IFF compat ible, advanced dithering routines.
CMT 299.00

DigiView III
Same software as DigiView Gold, however, the interface is different. Suits A1000 only.
OZI 353.95

Modeller 3D Aegis
3D object editor can be used with Sculpt 3D, Videoscape 3D.
ITT 119.00

Pageflipper Plus FX
Smooth, fast animation in any resolution, powerful compression. Add/Edit static or dynamic backgrounds/ foregrounds, library of preset effects (transitions)
CMT 229.00

Photon Video Cel Animator
High spec cel animator including pencil test mode.
OZI 176.95

Photon Video EDLP
Works with 25 frame EBU (PAL) supports CMX, ISC, Convergence, United Media and Grass Valley EDL formats 3 tracks 1 video, 2 audio for split edits.
CMT 699.00

Photon Video Transport Controller
Driver for single frame video controller.
CMT 399.00

Pro Video Font Library: Set 1
Broadcast quality fonts. Only for Pro Video Plus or Pro Video CGI
CMT 169.00

Pro Video Font Library: Set 2
Broadcast quality fonts for Pro Video CGI or Pro Video Plus
CMT 169.00

Pro Video Plus (PAL)
Video character generator.
CMT 489.00

TV Show
CMA 195.00

TV Text
CMA 195.00

Video Effects 3D (PAL)
3D video special effects and animation. Icon and mouse driven user interface. Supports overscan, online help. Operates in hires mode using 28 of the 4096 colours.
CMT 279.00

Video Studio
CMT 299.00
Titling, special effects.

VideoTitler Aegis
Video titling and special effects.
ITT 179.00

Video Wizard
Database to catalogue tapes plus video titling.
PAC $49.95

Education

Adventures of Sinbad
Builds vocabulary and reading skills. Animated graphics. Built in word processor, quiz maker and concentration game.
DFL $69.95

Aesop's Fables
Comnprehension, spelling and memory builder.
DFL $69.95

Algebra
True BASIC educational software
CMT 74.95

Animal Kingdom
6 activities. Animal encyclopedia, spelling, anagrams, identify the animal, memory game etc.
DFL $69.95

Arithmetic
CMT 74.95

At the Zoo
CMT 0.00

Birds 'n' Bees
Designed to teach children about themselves, their sexuality and development. Also hazards such as AIDS, harassment etc. Access level can be set.
PAC $39.95.

Calculus
CMT 74.95
True BASIC educational software

ConSoundTration
Three games with four skill levels, over 80 different graphics and digitized sounds. 1/2 players, randomly generated games
CMT 59.95

ConSoundTration Data Disk #1
Data disk for use with ConSoundTration
CMT 39.95

Decimal Dungeon
Decimal tutor. Trapped inside the crystal caverns of the dungeonmaster, you must answer problems to escape.
DFL $69.95

Designasaurus
Dinosaurs come alive with sights and sounds. Create your own prehistoric giant. Print out 12 different dinosaurs.
CMT 74.95

Dinosaurs are Forever
Build dinosaurs, print out, colour in, experiment with simulator.
CMT 49.95

Discover Chemistry 8+
CMT 29.95

Discover Math 8+
CMT 29.95

Discover Number 8+
CMT 29.95

Discover U.S. History & Geography
CMT 29.95

Doug's Math Aquarium
Mathematical formulae displayed graphically. Full colour images are produced from simple formulae.
CMT 119.00

Fraction Action
Math adventure game, addition, subtraction, multiplication and division on three difficulty levels.
DFL $69.95

Fun School 2 Series
Each program in this series comprises multiple subjects, in a game-type format. Strong animation and sound effects. Age 2-6, 6-8 and 8 up.
PAC $49.95

Galileo
CMA 119.00

Kid Talk
Reading and writing instructions with builtin speech.
OZI 44.95

Kinderama
Early learning games (5). Unicorn Software
DFL $69.95

Letters for You
CMT 0.00

Magical Myths
Animated stories of Greek Myths, comprehension etc.
DFL $69.95

Match-It
Interactive games and tutorials to teach basic colours and shapes.
DFL $49.95

Math-A-Magician
Interactive maths for all ages.
DFL $49.95

Math Talk
Talking tutor.
OZI 44.95

Math Talk Fraction
OZI 44.95

Math Wizard
Four educational math games with animated graphics.
DFL $69.95-

Mixed Up Mother Goose
CMT 49.95

My Paint
Includes 28 drawings, animated icon menus, various brush modes, color cycle effects, more colouring book disks available, sampled sounds for each picture mode.
CMT 69.95

Numbers Count
CMT 0.00

Opposites Attract
CMT 0.00

PreCalculus
CMT 74.95

Probability
CMT 74.95

Puppy Love
CMA 59.00

Read & Rhyme
Four reading activities - children interact with space creatures. Unicorn.
DFL $69.95

Read-A-Rama
Five programs for young children.
DFL $69.95

Robot Readers series
Chicken Little, Aesop's Fables. Little Red Hen, Three Little Pigs, The Ugly Duckling, The Three Bears. Interactive speech, word enhancement, find the word game etc.
DFL $39.95 each

Space Maths
Maths can be fun. Reinforces and teaches maths principles while the user enjoys an interactive game.
PAC $49.95

Spellbound
Animation, graphics, music and digitized speech to help learn to spell.
DFL $59.95

Speller Bee
OZI 44.95

Tales from the Arabian Nights
Reading comprehension, creative writing and language skills.
DFL $69.95

The Talking Colouring Book
Teaches colours and shapes through high quality voice, predefined pictures, also has a graphics editor.
CMT 49.95

Trigonometry
True BASIC educational software.
CMT 74.95

True Statistics
Math statistics.
CMT 115.00

Where in the World is Carmen Sandiego?
Adventure game - pick up interesting information about geography, history and culture.
DFL $79.95

Word Master
Four activities to build word skills.
DFL $69.95

Fonts

Calligrapher
ColourFont editor. Ccomplex font designer, allows fonts with up to 16 colours to be designed and used in any suitable Amiga graphics or DTP program.
CMT 179.00

Calligrapher Lion Fonts
CalligraFonts Series. Assorted set of Fonts on four disks including some ColourFonts produced using Calligrapher.
CMT 95.00

Fancy 3D Fonts
3D object file font sets. Use with Sculpt, Animate, Videoscape etc.
CMT 115.00

FontSet 1
Variety of sizes and styles. Add to the startup disk and it should work with most software, keyboard accessible.
ITT 34.95

Media Line Font Disk 1 & 2
Provide accessory fonts for use in video, graphics and desktop publishing. Font Disk 1 9 bitmapped fonts. Font Disk 2 structured fonts for 3D programs.
CMT 44.95

ProWrite Pro Fonts 1
Font collection for use with ProWrite V2.0
CMT 49.95

ProWrite Pro Fonts 2

Font collection for use with ProWrite V2.0
CMT 49.95

Zuma Fonts Vol 2
Video presentation graphics. Each volume contains three different typestyles ranging in size from 20 to 100 points.
CMA 65.00

Zuma Fonts Vol 3
Video presentation graphics. Each volume contains three different typestyles ranging in size from 20 to 100 points.
CMA 65.00

Graphics

Analytic Art
Fractal painting system. Uses mathematical expressions to generate pictures.
CMT 99.00

Animation: Editor
Animation sequencer. Animation files created in any Amiga display format can be brought together and converted into the animator: format and resolution.
CMT 85.00

Animation: Multiplane
Digital Compositor. Overlays several layers of animation created separately, into one.
CMT 129.00

Brushworks Vol 2
More custom graphics. All IFF compatible, colour palette files, colour and monochrome files, patterns.
CMA 43.00

Brushworks Vol 1
Hi, Med, Lo res files, solid and multicolour brushes, colour palette files, patters. IFF clip art.
CMA 59.00

Butcher II
Graphics utilities. Resolution conversion. Pixelation, mosaic tiling of pictures, etc. Image processing, format interchange.
CMT 55.95

Deluxe Help for DigiPaint
CMT 54.95

Deluxe Help for Photon Paint
CMT 49.95

Deluxe Library: Art Parts Vol 1
Variety of clip art for use in any program using IFF bitmaps.
ECP 45.95

Deluxe Library: Art Parts Vol 2
Variety of clip art for use in any programs using IFF bitmaps.
ECP 45.95

Deluxe Library: Seasons and Holidays
Variety of clip art for use in any program using IFF bitmaps.
ECP 45.95

Deluxe Maps #1: U.S.A.
CMT 39.95

Deluxe Paint II
32 colour painting. All resolutions, many brush distortion, rotate and scaling effects, smoothing and scaling, shading dithered or patterned fills, etc.
ECP 209.95

Deluxe Paint III
All the expected functions plus wrap fills, EHB shadow painting, faster perspective, powerful animation operation with all normal/special drawing tools.
ECP 249.95

Design 3D
3D modelling/rendering system, user friendly interface No HAM/true raytracing. Good rendering with halftone dithering of 16 colours. 3D text generator.
ITT 99.95

Desktop Artist
Graphics editor. Works with IFF files, multiple fonts, cut and paste, colour printouts.
CMA 55.00

DigiPaint
HAM paint system. Original omnicolour painting package to appear in version 3. 4096 colours on screen with usual tools. Good special effects tools.
OZI 114.95

DigiPaint III
Variable dither, flexible text rendering, user-controllable transparency, super bit-maps with auto-scrolling, colorize, texture mapping with anti-aliasing, etc.
CMT $129.00

Dragons Lair Demo
Dragons Lair Demonstration disk for game Dragons Lair
PRI 5.00

Draw Plus
Structured drawing package. Semiprofessiona, multi layer drawing system. Uses standard intuition inter face, overtaken by more recent products.
CMT 399.00

Express Paint V. 3.0
All the features of previous versions plus shaded and gradient fills with dithering, 3D perspective brushes, colour cycling, double arc curves etc.
PAC $199.00

Fine Print
CMT 74.95

Forms in Flight II
Allows creation of high quality images, then use the images to create animations. Import objects using Interchange. Includes surface patches, texture mapping.
CMT 175.00

Grabbit V2.0
Screen save and print utility.
OZI 61.95

GraphiCraft
CBM 99.00

Graphics Studio
Port from Apple IIGS, pulldown menus control functions Only in 32 colour lores and 16 colour hires. Colour cycling, editable patterns, adjustable dropshadows.
OZI 61.95

Hamandel: HAM Fractal Art
CMT 59.95

Icon Paint
Workbench and icon designer.
CMT 129.00

Impact Business Graphics
CMT 145.00

Impact! Aegis
Business graphics package. Oriented towards present ation graphics, graphs, pie charts limited animation quality.
ITT 109.95

Interchange
CMA 89.00

Interchange Turbo
Swaps file formats from one graphics product to another.
CMT 99.00

Lights! Camera! Action! Aegis
Allows the combination of animations, IFF pictures, sounds and music.
ITT 99.95

Media Line Clip Art Collection
More than 200 clip art picturs. A show utility to add to DTP programs that support IFF graphics.
CMT 44.95

MovieClips 1
ITT 34.95

Newsletter Fonts
CMT 69.95

Oriental Desk Top Art
CMT 39.95

Photon Paint II
Contour mapping, stretch option, 4,096 colour palette, page flipper, magnification, rubthrough, pantograph, blending, colourization, air, brush, stencil and more.
CMT 199.00

Pixmate
Image processing and enhancement tools.
CMT $99.00

Pure Colour
Prints colours better than normal.
CMT $39.95

Sculpt Animate 4D Professional
Objects can be created, joined together, rotated, duplicated, expanded to produce a complex piece
CMT $799.00

Sculpt Architecture Design Disk
3D object library for use with Sculpt/Animate. Com ponent

parts include doors, windows, arches, roofs, walls, stairways and architectural constructs.
CMT $44.95

Sculpt Future Design Disk
3D object library for use with Sculpt/Animate. Build spacecraft, space stations, bases, vehicles, robots and androids to create a future world.
CMT $44.95

Sculpt Human Design Disk
3D object library of skeletal human structures. Disk includes complete male/female prototypes in skeletal form.
CMT $44.95

Sculpt Microbot Design Disk
3D object library for usewith Sculpt/Animate. Advanced robotic designs and components. Details, surrealistic modules, comes complete with blueprints/ models/tips.
CMT $44.95

Structured ClipArt
ITT $59.95

Turbo Silver 3D
Create 3D,raytraced animations, up to 512 frames per animation. Play back 660 framer per sec., raytrace whole screens in 4 minutes. Supports Genlock/overscan.
CMT $249.00

Turbo Silver Architecture Design Disk
CMT $44.95

Turbo Silver Future Design Disk
CMT $44.95

Turbo Silver Human Design Disk
CMT $44.95

Turbo Silver Interior Design Disk
CMT $44.95

Turbo Silver Microbot Design Disk
CMT $44.95

Hardware

512KB Ram Expansion Card for A500
Expands A500 memory to over 1MB, simple to install, just plug in, real time clock calendar, new enable switch to turn off expansion, 12 months guarantee.
HES

AMax
Employs hardware and software to emulate a Mac. Requires Mac ROMS. External Mac drive recommended. No AppleTalk Support. Uses Amiga parallel/serial.
QUE $299.95

Acudat 3.5" Disk Drive
An external disk drive that has an on/off switch, is daisy chainable and boasts the usual slimline construction expected from third party drives.
H&R $249.00

Amiga 1000 parallel printer cable
Enables connection to a parallel printer
CMT $35.00

Amiga 1901 Conversion
HPD $0.00

Amiga 4Way Joystick Adaptor
Enables four joysticks to be connected simultaneously for games which support four players.
CMT $24.95

Amiga 500 Command Centre
CMT $179.00

Amiga 500/2000 parallel printer cable
Enables connection to parallel printer.
CMT $19.95

Amiga A1000 Gender Changer
Reverses gender of connection port.
HPD $27.95

Amiga Mini Amp
Two speakers, plus a low power amp with volume control which draws power from the RS232 port.
HPD $64.95

Amiga Printlink 1
HPD $89.00

CView I
RGB/Composite adaptor.
CMT $99.00

CView II
17/18/1901 etc., adaptor
CMT $99.00

C64 Emulator II A1000
Improvement over version 1. Emulates C64 software which is not too graphics intensive. A bit on the slow side to be too practical. File transfer to AmigaDOS.
OZI $132.00

C64 Emulator II A500/2000
OZI $132.95

California Access 3.5" External Drive
3.5" floppy disk drive.
CMA $299.00

Capone Lightguns
Use Lightguns instead of mouse or joysticks.
CMA $119.00

DigiDroid
Rotates DigiView colour wheel.
CMT $179.00

DigiView Gender Changer
A500/2000
CMT $59.95

Disk Drive 3.5"
External disk drive. Short supply.
CMT $199.00

Disk Drive Head Cleaner
ECP $6.95

Disk Drive Head Clean. Kit

3.5"
Cleans drive heads uses special disk plus alcohol based cleaner.
CMT $19.95

Easyl A2000
Driver software and drawing package included. Menu bar configurable for paint program options. Model specific versions.
CMT $999.00

Easyl A500
Model specific. As per A2000.
CMT $929.00

External Drive Switch
Easy way to switch external drive in and out, for games which will not operate with external drive attached.
PAC $39.95

Fireball
A2000. SCSI interface and drive, true DMA, autoboot, industry standard 50 way connector on SCSI passthru.
MAS $0.00

Flicker Fixer A2000 (PAL version)
Smooths interface flicker, needs multisynch monitor.
CMT $1199.00

Flicker Master
Works with all Amiga models, greatly reduces interlace flicker. Attaches easily to monitor and improves con trol in all resolutions.
CMT $34.95

GVP SCSI + 2 Multi-Function Board
SCSI controller and 2Mb FAST RAM expansion on one board.
CMA

GVP A3001 25Mhz 68030/68882 Upgrade Kit
Asynchronous 68030 design, high clock rates and genlock compatibility, factory installed 25Mhz floating point processor, autoboot hard disk controller, 68000 fall-back .
CMA

Halo Scanner
ECP $493.95

Hurricane Accelerator Board
CMA $2465.00

Inboard A500
Zero K. Internal.
CMT $679.00

Inboard A500
2Mb internal.
CMT $2999.00

Joystick Extension cable
CMT $10.50

Kickstart Eliminator
ROM chips eliminated need for Kickstart disk. Boot directly from workbench, frees up to 256kB of RAM
CMA $255.00

Lightpen Inkwell 184A
Works with mouse/keyboard, can be combined with Easyl. Supports Amiga 500, 1000, 2000 and A2000. Operates in interlace and noninterlace overscan mode.
CMT $259.00

Lipstick Plus
CMA $54.95

M-4 Mouse
Designed to withstand rough and constant handling. Brass rollers.
PAC $79.95

Master 5A Disk Drive
Doublesided, doubledensity drive with 655360 bytes of data storage capacity, 100% compatible with Amiga, 40/80 track select, dual colour LED, 1yr warranty.
CMR $439.00

Micromegs
Alternative to A501. 512K ram and battery backed clock
MAS $0.00

Midi Interface ECE
A500/A2000
CMT $139.00

Midi Interface ECE
A1000
CMT $139.00

Midi Interface (Advanced)
A500/A2000
CMT $279.00

Mind Light 7
CMA $379.00

Minigen
Genlock A500/A2000
CMT $499.00

Minimegs
2 Megabytes of external RAM for A500/A1000. Auto con figure, low power, 1 Meg DRAMs, RAM tachometer, auto configure LED, compatible with A501.
MAS $0.00

Mouse Master
Solves swapping of mouse and joystick cables, stops wear and tear on cables and connectors.
CMT $74.95

Overdrive A2000
CMT $499.00

Panasonic WV1410 Video Camera
CMT $699.00

Parallel Adapter
OZI $52.95

Parallel Printer cable 2m
CMT $19.95

Parallel Printer cable extender F/F
CMT $35.00

Parallel Printer Extn. cbl. MtoM 3m
CMT $35.00

Perfect Sound A500/A2000
A two channel stereo audio digitiser with complete sound editing software and library of prerecorded sounds. Compatible with most musical programs.
CMT $189.00

Perfect Sound A1000
A two channel stereo audio digitizer with complete sound editing software and library of prerecorded sounds. Is compatible with most musical programs.
CMT $179.00

Perfect Vision
Realtime frame grabber. Captures b&w images in 1/60 ofa second. Plugs into parallel printer port. External control module, colour filters, power cable, manual.
CMT $549.00

Phaser Gun
QUE $99.95

Proton Memory Expansion 1 Mb
1 Megabyte external memory expansion for Amgia 500 or 1000. All boards are autoconfigured.
PRO $0.00

Proton Memory Expansion 512K
Internal 512K memory expansion for Amiga 500. All boards are autoconfigured.
PRO $0.00

Rapid Fire Adaptor
CMT $44.95

Rendale A8802
Pro Genlock A500/2000
CMA $799.00

RS 232 cable male to male
CMT $29.00

RS 232 cable male to female
CMT $29.00

Senator 3.5 Inch Disk Drive
Doublesided, doubledensity drive with 1Mb of unformatted storage capacity, fully compatible with Amiga, device select, full 1 year warranty.
HPD $299.00

Soft Eyes 30 x 22.5 cm
Screen filter.
ECP $27.95

Soft Eyes 35.5 x 25.5 cm
Screen filter
ECP $32.95

Subsystem A500
CMT $549.00

Supra 20Mb
Hard disk for A1000.
CMT $1899.00

Supra 20Mb
Hard disk for A500. Amiga Bus passthrough for un limited expansion. Access time as low as 11ms, data transfer of over 500K/sec. Full support WB 1.3.
CMT $1899.00

Switch Box 2way Prl. connecters

CMT $39.95

Switch Box 2way DB connecters
CMT $39.95

Switch Box 3way Prl. connectors
CMT $49.95

Switch Box 3way DB connectors
CMT $49.95

Switch Box 4way Prl. connectors
CMT 59.95

Switch Box 4way DB connectors
CMT $59.95

Timesaver
CMT $159.00

Tiny Tiger
Features quality Fujitsui mechanism. Include SCSI interface, drive and power supply. Drive formatted with Workbench 1.3, plugs into A500,A1000,A2000.
MAS $0.00

Transvestor Gender Changer A500
CMT $59.95

Transvestor Gender Changer A1000
CMT $59.95

Viewmate
RGB-CVBS Switcher. Makes monitoring while digitizing or viewing your video player very easy.
DIG $0.00

Video Genlock A1000/2000
CMA $2300.00

XSpecs 3D Glasses
Includes software
CMT $220.00

Integrated

Critics Choice
Integrated wordprocessor (Kindwords), spreadsheet (Maxiplan 500) and database (Microfiche Filer).
DFL $0.00

Publishers Choice
Basic DTP system: Kindwords V2.0 word processor, PageSetter 1.2 page layout, Artist's Choice graphic images, Headline Fonts..
DFL $199.95

The Works!
Scribble!, Analyze!, Organize! all in one package.
OZI $319.00

The Works! (Platinum Edition)
104,000+ spelling checker, 470,000+ thesaurus, prints IFF graphics, spreadsheet module, database module, telecommunications module, sidways print utility.
CMT $389.00

Write and File
Two most commonly used business functions. Database layout similar to spreadsheet, the wordprocessor has standard featurs with expandable spelling checker.
PAC $169.00

Joysticks

Competition Pro 2000
OZI $19.95

Competition Pro 1000
OZI $29.95

Competition Pro 5000
Sturdy design, seethru body and steel shaft with micro switches. Non-skid feet.
OZI $39.95

Joystick 200
OZI $29.95

Starcursor
Solid contruction, 3 yr guarantee, 3 fire buttons, suction caps, quality switches. Recommended! (Split button and 8/4 way selector)
MUL $54.95

Terminator "The Final Joystick"
OZI $39.95

Languages

AC BASIC
Compiler, fast with graphics. Indexed documentation. Compatible with AmigaBASIC interpretor, run up to 50% faster.
CMT $289.00

AC Fortran
Implemented to ANSI 77 Fortran standard. Includes debugger, linker, library manager, runtime library, IEEE math and C interface
CMT $499.00

AREXX V1.06
Task intercommunication port will be standard in WB1.4. Enables one application to send commands to another integrate programs of a similar nature.
CMT $74.95

Assempro
Integrated assembler, disassembler, debugger & editor.
PAC $169.00

Aztec C Compiler Professional
CMA $499.00

Aztec C Compiler Developer
CMA $599.00

Aztec C Source Level Debugger
CMA $159.00

Benchmark C Library
Adds Cstandard routines.
CMT $139.00

Benchmark IFF Library
Adds IFF file handling routines.
CMT $139.00

Benchmark Modula 2
Supports standard Amiga features.
CMT $269.00

Benchmark Simplified Library
CMT 139.00

Devpak V2.0
Edit/Assemble/Debug. Assemble source up to 70,000 lines per minute, editor runs under intuition menu/ keyboard control. Requires Kickstart 1.2 or later.
CMT $149.00

Explorer ML Monitor/Debugger
CMA $130.00

Fortran 77
Mathematical and scientific language. Full ANSI implementation, accepts mainframe programs, dynamic link and overlay, no limit on RAM.
CMA $260.00

G.F.A. BASIC 3.0
Includes over 300 commands, inline C and assembler commands, extensive Amiga commands with submenus and builtin file requester and runtime interpreter.
CMT $169.00

Getting Started with UCSD Pascal
CMT $95.00

HiSoft BASIC Professional
Editor/compiler, selective runtime routines, symbolic debugger. Allow compatible C or assembler code incor porated as functions/ subroutines.
CMT $229.00

J Forth
Forth compiler, 256K or larger Amiga. Interpretor and compiler in one language providing interactive pro gramming environment. ASCII or SCREEN files.
CMA $209.00

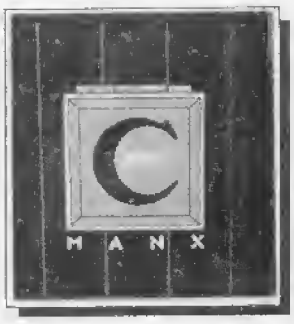
Lattice C V5.0
Includes Lattice C compiler, source level debugger, compiler companion utilities, code profiler, global optimizer, 304 C function library, assembler/disassem.
CMT 429.00

Ldebug
CMA $199.00

Metacomco Lisp
CMA $400.00

Metacomco Pascal
Single pass ISO compiler with many extensions.
CMA $250.00

The Degubber
CMA $299.00



True 3D Graphic
CMA $133.00

True Advanced String Libraries
Programming tools.
CMA $133.00

True Runtime Package
Application development. Noncommercial licensing. Unlimited commercial licensing.
CMA $300.00

True Sorting & Searching
CMA $133.00
Subroutines for sorting arrays.

TrueBASIC
Transportable BASIC language code compatible with MS DOS, Apple, Mac, CP/M and others.
CMA $240.00

UCSD Pascal
Structured language, multitasking support, full manual.
CMT $169.00

Magazines

AM News Vol. 1 #2 Amiga
A magazine on a disk with some programs.
OZI $26.95

Amiga AX Disk Magazine (U.S.A.)
A magazine which includes a disk.
CMT $24.95

Amiga Transactor
Bimonthly magazine.
CMA $12.00

Amiga User U.K.
CMT $10.95

Amiga World U.S.
Tabloid, solid Amiga publication.

CMT $11.95

AmigaLive!
A bimonthly twin set magazine on a disk. Disk one contains editorial displayed to look just like real magazine pages. Disk two is full of Public Domain PRGs.
PRI $24.95

Australian Commodore & Amiga Review
Monthly magazine.
SAT $3.50

Megadisc
Information and entertainment on disc.
MEG $50 for 3

Music

ADrums
Drum machine with sample sounds.
CMT $115.00

AMAS Sound Digitizer
Sound Digitiser and MIDI interface. Requires connec tion to both serial and parallel ports. Includes software for sound sampling.
OZI $220.95

Amiga Midi Interface
Connect MIDI devices.
HPD $64.95

Amiga Mono Digitiser
HPD $99.00

Amiga Stereo Digitiser
HPD $125.00

AudioMaster V2.0 Aegis
Digital sampling system, two oscilloscopes display, stereo, sampling rates as high as 56,000 Khz with 68020 processor. Print waveform option. Real time echo
ITT $119.00

CZAR
Casio synthesiser software
CMT $389.00

Deluxe Music Construction Set
Includes MIDI, cut and paste, on screen keyboard and printout options. 15 IFF sampled sounds.
ECP $164.95

Dr. T's Casio Keyboard Sequencer
CMT $329.00

Dr. T's Copyist Professional
Sheet music from KCS, Pro 24, Texture and Amiga SMUS, Limited to 50 pages and prints on HP laserjet.
CMT $359.00

Dr. T's Keyboard Control Sequencer
Three modes of operation track, open and song. Edit options include merge, echo, solo and mute. Controlled through screendiplayed tape recorder.
CMT $359.00

Dr. T's Midi Recording Studio
Mouse activated. Use keyboard as well as true external MIDI devices as a musical keyboard. Mute and unmute tracks, cut, copy, paste, transpose, no print out.
CMT $109.00

Drum Studio
OZI $79.95

Dynamic Drums
Enter drum patterns in real time with visual feedback/ editing. Full Midi implementation and becomes velocity sensitive when triggered from Midi keyboard.
ITT $79.95

Dynamic Studio
Sequencer, editor, builtin drum machine, includes MIDI. Also SMPTE support and ability to playback instruments translated with Sound Oasis.
ITT $199.95

ECE Pass Thru Midi Interface
CMA $159.00

ECT Digital Synthesiser Disk
CMT $39.95

ECT Grab Bag Disk
CMT $39.95

ECT Orchestral Disk
CMT $39.95

ECT Rock Disk
CMT $39.95

ECT Sampleware
CMA $430.00

ECT Sampleware Compendium
CMT $125.00

Encore: Mouse & Key Rec. Studio
Macro records, records keyboard/mouse macros and assigns them to hotkeys. Capture mouse movements, also speech synchronized to macros, scrolling text option.
CMT $99.00

Future Sound A500
Records two tracks simultaneously, samples up to 42,000 samples per sec., 20,000 per channel in stereo, full support for hard disks RAM disks & VDO devices.
CMT $229.00

Future Sound Digitiser
Digitises sounds. The sounds can be altered, reversed, clipped etc.
CMA $430.00

Instant Music
Uses colour and visual forms to define sounds. Music composition for nonmusicians.
ECP $45.95

Life Cycles: Classical & Pop
CMT $49.95

M
Realtime interactive composition.
CMT $279.00

Midi Gold Interface
CMA $225.00

Midi Interface
Multiple ports 12 INS, 46 OUTS/THRUS, switch select able LED status confirmation, serial port pass thru.
CMA $0.00

Midi Magic
Midi sequencer, help text, multitasking, 16 tracks, 26 sequences, quantizing, multi channel recording.
CMT $199.00

Midi Matrix
Smart Midi Patch Bay. By pushing one or a few buttons you can assign any input to your Amiga or bypass it.
DIG $0.00

Midi-X2

Musical instruments digital interface. Compatible with all music software that recognises MIDI. Designed for A500/200, but can be interfaced with A1000 by jumper type gender change.
DIG $0.00

Midi-XPlus
Midi interface plus hi-speed sampler. A two-in-one interface device.
DIG $0.00

Mimetics Sound Sampler
CMA $315.00

Music Data Rock & Roll
ECP $49.95

Music Disk Hot/Cool Jazz
ECP $45.95

Music Student 1
CMA $89.00

Music X
Sequencer, keymap and patch editor, MIDI, master clock accurate to one millisecond, edit while recording.
CMT $499.00

Pro Sound Designer
4 channel playback, 8 sample buffers, chip or fast memory, IFF instruments, full editing effects, edit sample wave, real time monitor. 128Khz stereo.
QUE $139.95

Sonix Aegis
Digital synthesizer supports eight MIDI voices, up to 32 channels, and IFF format, create, modify, edit. Save to disk or dump to printer as sheet music.
ITT $99.95

Sonix Soundtrax Vol. 1 & 2 Aegis
Each volume contains two disks of songs crated with sampled instruments. Interacts with Sonix.
ITT $24.95

Sound Oasis V1.1
Reads Ensoniq Mirage keyboard disks, converts sounds to IFF samples, or sounds can be played from a MIDI keyboard or computer keyboard.
ITT $99.95

Sound Quest II: Texture
Incremental recording, animated edit display with a sound option, three options for quantizing, multiple Midi channels, chord flipping, arpeggiation.
CMT $199.00

Synthia
Five synthesizer modes, multitasking, MIDI, two disk set including SMUSPlayer - play SMUSIFF files independently up to 32 tracks/instruments.
CMT 135.00

Trilogic Audio Digitizer
Adjustable sensitivity, stereo, LED level, works with Audiomaster, Prosound etc.
HPD $99.00

Productivity

Bumper Sticker Maker
Complete with self adhesive vinyl blanks.
PAC $49.95.

Business Card Maker
Graphic editor, mix text and graphics, printer support.
PAC $69.95.

Day by Day
Diary, appointment scheduler, and forward planner.
PAC $59.95

Desserts Cookbook
150 recipes.
CMT $29.95

Extend
CMT $64.95

First Shapes
Identify math shapes preschool.
OZI $44.95

FormAtion
Uses all AmigaDOS fonts, center or justify text, three line patterns, import text from word processors, four line thicknesses, dual lines, automatic from fillin.
CMT $109.00

Norgen
CMT $119.00

Page Render 3D
CMT $235.00

Project Master
Professional project management. Graphic flow of activities, Critical paths, actual vs planned. Expense graphs, Gantt and PERT charts, resource loads.
CMT $279.00

Promise
Spell checker - 95,000 word dictionary, 18 words per second, Spell Help.
DFL $69.95

TAB Betting
ECP $31.95

Thinker
Menu idea processor. Hypertext and Outline processing combined. Link to applications, pictures and text.
CMT $ 89.95

TR Sketch
CMT $39.95

Variety Cookbook
150 recipes
CMT $29.95

Virus
QUE $49.49

WB Extras
CMT $59.95

Your Family Tree
Genealogy program
CMT $79.95

Spreadsheets

Analyse!
Full colour graphs, IFF files, intuition interface, multiple windows, definable column widths. Now bundled with The Works!.
OZI $149.95

Analyze! 2.0
Bundled with The Works!
OZI$149.95

Budgeteer
Compiled BASIC spreadsheet package, selection of cat egories. Whatif calculations, graphing functions. Uses Amiga mouse, menu, windowing environment.
CMT $79.95

DG Calc
Menu/command driven, individually adjustaable columns, integrates with other programs, windowing, 52 user de fined variables, 9 programmable function keys.
PAC $89.95

Flipside
Prints spreadsheets of unlimited size. Sideways print utility.
OZI $52.95

Haicalc
Compatible with all Amigas, multitasking/multiwindow Fully supports intuition, uses memory only when a cell containsdata,cut/copy/paste,pie, bar, line and more
CMT $79.95

MaxiPlan 500
Spreadsheet, graphics and database providing 512 column by 16,384 row processing area and whatif analysis with numerical data.
CBM $249.00

MaxiPlan Plus (A2000)
Includes a macro feature and additional utilities as well as features of MaxiPlan 500
CBM $349.00

Superplan
Full featured spreadsheet environment, print wall planning charts/Gantt charts, graphics facility, Lotus 123/dBase compatible. Stand alone or with Superbase
CMT $209.00

Tutorials

Intellitype
Typing tutor
ECP $45.95

Mastertype
Typing tutor
MSP $59.95

Mavis Beacon Teaches

Typing
Typing tutor
ECP $73.95

New and Improved Mastertype
Typing tutor
MSP $59.95

Speed Read
Increases reading speed and comprehension. Progress at your own rate.
PAC $99.95

Utilities

Ami Alignment System
Align your own 3 1/2" disk drive. Requires some technical knowledge.
CMT $59.95

Amiga Virus Protection Toolbox
Includes Boot Check, Recover, Change Control Checker, Check New. For all Amigas with Workbench 1.2 and 1.3.
PAC $00.00

AmigaDOS Tool Box
Package contains AmigaDOS Quick Reference Guide, plus disk of utilities including Screen Grabber, Disk Copier, Floppy Drive Speed-up, fonts.
PAC $89.95

Amikit
CMT $59.95

AntiVirus Pak 10
Several Virus killers, including a bootblock resident autorunning protection program. Descriptions of all known Virus strains. Menu driven. Bootable.
PRI $14.95

ARP 1.3
AmigaDOS Replacement Project version 1.1. Includes all documentation. Assembly language rewrites of all C DIR commands. Faster. Better wild cards.
PRI $8.95

B.A.D. Disk Optimiser
Decreases access time up to 500%. Supports multiple partitions, has an incredible workbench performance and works with fast filing system. Defragments disk.
CMT $74.95

CLIMate
Additional commands for CLI, displays ASCII or Hex, supports floppy or hard disk. Intuition interface to handle most CLI commands.
CMT $64.95

Custom Screens
Creates basic code from screen drawings, Edit, draw and paint screens, convert IFF to basic code. Paint utility for programming.
CMT $89.95

Disk Magic
CMT $74.95

Disk Mechanic
Includes a disk optimizer, hard disk backup program, file recovery program, disk editor, and a dozen CLI utilities.
CMT $119.00

Diskmaster
Excellent utility for file manipulation. Sits on own screen, two DIRs displayed, COPY, RENAME files. Format or DISKCOPY. View images, play samples. Easy to use.
CMT $74.95

Diskwik
Restore deleted files, eliminating errors, editing in Hex or ASCII, reformatting tracks. Enables total access and control of disks.
CMT $75.00

DOS 2 DOS
File transfer. Transfers all file types from PC/MSDOS to AmigaDOS and vica versa. Handles 3 1/2 and 5 1/4 " formats.
CMT $79.95

DOS Express
Instant, comprehensive online reference for the comm ands and features of AmigaDOS. Information on devices, directories, DOSerror messages and more.
CMA $59.95

DOS Lab
CMT $39.95

Doug's Colour Commander
Loads/saves/copies files from screen to disk and disk to screen, load pictures from disk and save any screen as an IFF file with or without icon. Change colours.
CMT $39.95

Expert System Kit
256K or larger Amiga. Three development utility pro grams plus examples that enable a user to implement a rule based expert system to enable data exchange.
CMA $195.00

F.A.C.C. II
Floppy disk accelerator, buffers directory sectors, decreases drive access, graphic display and auto start.
CMT $49.95

Floppy Accelerator II
CMA $69.00

G.O.M.F. V3.0
Guru catcher. Includes button.
CMT $109.00

Gizmoz II Productivity Set
Useful utilities such as clock, calendar, diary etc.
CMA $129.00

Mac 2 DOS
Requires external Mac drive. Enables you to read and write Mac format disks. Various translation of ASCII possible, also transfers graphic files.
CMT $0.00

Magellan
Artifical intelligence expert system building tool.
CMT $279.00

Magnum Turbo
CMA $75.00

Marauder II
Disk backup, with parameters, various copy options. Multitasking. Copies most commercial programs.
CMT $69.95

Mastering CLI V2.3
Disk tutorial, includes WB 1.3
CMT $59.95

Power Windows V2
Create custom screens, multiple windows and more, then generate source code for installation in original programs.
CMA $199.00

ProjectD
Copy to all four disk drives at once, list of errors, includes three other utilities Onmnicopy (MSDOS), Editor tool, Catalogue Tool (automatic disk catalogue)
CMT 74.95

Proscript
Postscript utility for use with ProWrite V2.0. Post script reads ProWrite files and prints them on any postscript equipped printer.
CMT $65.00

Quarterback
HD Utility. A fast backup 20MB in 30 minutes or less. Handles files of unlimited length, subdirectories, and files per subdirectories. Select by file restoration.
CMT $99.00

Quickmerge
CMT $99.00

Raw Copy
Back up utility, standard and parameter copier.
CMT $89.00

Stuff It
Create your own pulldown menus, each capable of sending a user defined series of keystrokes to other programs.
CMT $59.95

Superback
Cross compatible with L Backup files. HD utility.
DFL $99.95

Text Editor V2
CMA $93.00

The Demonstrator
CMA $65.00

Toolcaddy
CMT $69.95

TR TextEd
Programmers editor.
CMT $39.95

TranScript
Simply helps you write. Provides a wide array of text editing and manipulating features. Includes 90,000 word spelling checker. Creates indexes/mail merges.
ITT $69.95

Ultra DOS Utilities
Module 1
CMT $69.95

Virus Infection Protection
Database of boot blocks
OZI $69.95

Workbench 1.3
New Shell, many extras.
COM $30.00

Zing
Utilities that execute all the basic CLI system comm ands from Workbench through menu, mouse and function keys.
CMA $159.00

Zing Keys
Macro and hot key program lets you paly back mouse movements or type out any series of commands with one keystroke.
CMA $99.00

Zing Spell
CMA $139.00

Word Processing

Beckertext
Graphics and columns. Numerous styles & fonts, auto wordwrap, auto page numbering, auto hyphenation, auto table of contents & index generation. spell check
PAC $149.00

Excellence!
250 available fonts, 90,000+ word dictionary, Index and Table of Contents generator, Grammatical/Style checker, Thesaurus, Headers, Footers/Footnotes WYSIWYG
OZI $439.00

Fleet Check
Spell checker.
CMT $49.95

Flow
Database or outline processor. Idea processor. Assists in creating sales reports, school papers and novels, plan business strategies and schedule appointments.
CMA $199.00

GoldSpell II
For use on most wordprocessors and desktop publishing files, 90,000 words plus.
ITT $44.95

Kindwords 2.0
WYSIWYG wordprocessor that can print both graphics and text, 90,000 word spelling checker, selection of font sizes.
DFL $99.95

Pen Pal
Word processor, database, forms generator. Supports 4096 colours output and IFF pictures. Flows around graphics. Includes a 100,000 word spelling dictionary, search/replace and more.
PAC $239.00

Protext Amiga
Includes background printing and 45,000 word spelling checker and mail merge. Version 4.1 is much improved. Text based a fast, solid editor.
PAC $199.00

ProWrite V2.0
Generate proposals with charts, 95,000 word spelling checker, mailmerge, fast graphics printing. WYSIWYG.
CMT $179.00

Scribble Platinum
WYSIWYG.IFF graphic support. 104,000+ word spelling checker, 470,000 thesaurus with definitions, multiple windows, cut and paste, mail merge.
CMT $179.00

Scribble!
WYSIWYG wordprocessor that contains a 40,000 word spelling checker. Now bundled with The Works!
OZI $132.95

TextCraft Plus
Quick Reminder onscreen help, 29 tutorials, onscreen reference to keyboard shortcuts, mouse control, clear and concise instructions, six possible text styles.
CBM $99.00

Textpro
Edit C source, define up to 30 function keys. Fast printer output using own printer drivers, merge IFF graphics, grab screens with BT SNAP utility
PAC $99.00

WordPerfect Library
Helps organise appointments, notes, files and programs Includes Calendar, Notebook, Calculator, File Manager, Program Editor.
SWA $0.00

WordPerfect V4.1 English
Very fullfeatured program with drivers for almost any printer made. Ported from IBM and Amigaised. Speller and thesaurus included.
SWA $0.00

KEY TO DISTRIBUTORS MENTIONED IN THE SOFTWARE GUIDE

BES BEST Software
PO Box 334, Lindfield 3070
(02) 416 9077

CBM Commodore Computers
67 Mars Road, Lane Cove 2066
(02) 427 4888

CMA Computermart Pty Ltd
622 Newcastle St
Leederville, WA 6007
(09) 328 9799 Fax: (09) 227 7324

CMR Computa Magic Pty Ltd
Shop 5, 30 Hall St
Moonee Ponds 3039
(03) 326 0133 Fax (03) 370 8352

CMT Computermate Products
9 High Street
Mt. Kuring-Gai, NSW 2080
(02) 457 8118 FAX: (02) 457 8739

DFL Dataflow Computer Services
134 Barcom Ave
Rushcutters Bay 2011
(02) 331 6153

DIG Digital-X (Australia)
Level 67, MLC Centre
Martin Place, Sydney 2000
Fax (02) 221 1987, Tx AA 72566

ECP Entertainment & Computer Products
4/18 Lawrence Drive
Nerang 4211
(075) 96 3488 Fax: 96 3512

HES Home Entertainment SuppliersP/L
Unit 1/128 Bonds Rd
Riverwood 2210
(02) 533 3679

HPD Hardware Peripheral Distributors
7/100 Hewittson Road
Elizabeth West SA 5113
(08) 252 3300 FAX: (08) 252 4755

H&R H & R Wholesale Pt/L
3 Marsh Street
Granville NSW 2142
(02) 897 1044 FAX: (02) 897 1223

ITT In Touch Tutorials
Level 5, 55 Lavender Place
Milsons Point 2061
(02) 954 3730

MAS M.A.S.T. Computer Discounts
19 - 21 Buckland Street
Broadway, NSW 2007
(02) 281 7411 Fax: (02) 281 7417

MEG Megadisc
PO Box 759, Crows Nest 2065
(02) 959 3692 Fax: (02) 959 3525

MSP Mindscape International
5 - 6 Gladstone Road
Castle Hill NSW 2154
(02) 899 2277 FAX (02) 899 2348

MUL Multicoin Amusements P/L
17 Wrights Place
Labrador 4215
(075) 37 5711 Fax: (075) 37 3743

OZI Ozi Soft Pty Ltd
3rd Floor, 55A Mentmore Ave
Rosebery 2018
(02) 313 6444

PAC Pactronics Pty Ltd
98 Carnarvon St, Silverwater
(02) 748 4700

PRI Prime Artifax
9 Augustine St, Hunters Hill 2110
(02) 817 0011

PRO Proton Group
1 Pope St, Beverley SA 5009
(08) 347 2072

QUE Questor (Imagineering)
Mailbag 9, Rosebery 2018
(02) 662 7944

SWA Sourceware Pty Ltd
Unit 1, 6/8 George Place
Artarmon
(02) 427 7999

SYB Sybiz Pacific Pty Ltd
7 Jordan St, Gladesville
(02) 816 3111

Using Public Domain Software ...especially Fish Disks

NO ONE COULD ever argue that Fred Fish, the man behind the entire Fish disk collation, has done anything less than a wonderful job. However, his criteria for the inclusion of programs are broad. Many additions were intended primarily for the use of programmers. Often, the source code required to make changes to programs has also been included. For most of us, this is of no concern.

However, this approach has meant that on many of the earlier Fish disks, and even on some of the more recent inclusions, some programs must be accessed using the CLI (Command Line Interface). In other words, you can not simply double click an icon to open a project or execute a program. There may not be one icon on the disk at all!

You double click on the disk, the window opens, and after some disk whirring you see . . . nothing. It's time to dig out the mysterious CLI and get typing. (You might learn something useful here, so keep reading.)

First off, you'll need to boot your machine with a Workbench disk. That means you insert the disk at the Workbench prompt (the hand holding the disk). This is called booting - a warm boot (when you hold down the CTRL-L/ Amiga-R/Amiga combination) leaves the computer's memory pretty well as it was - only pointers saying where everything is get changed. A cold boot (switch the power off and on) completely erases everything in the computer's temporary memory called RAM.

Ok, so you're up and running.

What to do if you only have one disk drive

● So that second drive is still on hold. Take some advice. Get it as soon as you can. In the meantime, you should learn a few tricks to reduce disk swapping and prepare yourself to use the CLI and those early Fish disks at the same time.

Start by opening a CLI window. If the CLI icon is not in your main Workbench window, it may be in the system drawer. On older versions of Workbench, you may have to activate the CLI icon from preferences first.

Once you have the window open, you are ready to enter CLI commands. However, these commands must be loaded from the Workbench disk whenever you want to use them. With only one drive, you'll be forever swapping disks. The solution is to copy the commands you will need into RAM:

Do this now:-

```
COPY C\DIR RAM:
COPY C\CD  RAM:
COPY C\TYPE RAM:
```

You might want to copy other commands in the same fashion later on as you discover you need them. We recommend you purchase a good CLI reference manual for serious work. For now, you're ready to start.

Looking at a Fish disk from the CLI

● Okay, open a CLI. (If you only have one drive and followed the instructions above, you just did that.) If the CLI icon is not in your main Workbench window, it may be in the system drawer. On older versions of Workbench, you may have to activate the CLI icon from preferences first.

Now insert the Fish disk into a spare drive. (Single drive users insert it after removing the Workbench disk).

Then type:-

Two Drives	**One Drive**
CD DF1: or	
CD {device}:	
DIR	RAM:DIR

Now you should see a list of programs and directories, which are the same as drawers. The drawers have a (DIR) after the name. To help you, Fred Fish normally places some text files on the disk. These contain helpful info such as the contents of each disk, and tips on what each program can do or how to start it up. The file might be called README or something to that effect. Another file called POSTER will have information about where the program or disk originated.

To view any of these helpful text files enter:

For Two Drives	**For Single Drives**
TYPE {filename}	RAM:TYPE {filename}

You can move into directories just as you can look in a drawer using the CD command (change directory).

Enter:-

CD	RAM:CD
{directory name}	{directoryname}

then:-

DIR	RAM:DIR

Ok, now you should see a program you can execute or run. There may be other files too, so be careful. The one you're looking for should have been mentioned in the help text file - of which there may be additional ones in the directory you are now in.

For example a program called FURNITURE may have the files:-

```
FURN
FURN.DOC
FURN.c
FURN.OBJ2
FURN.DAT
readme
```

Start by TYPEing the readme file and also FURN.DOC which is probably the documentation for the program in question. To run the program simply enter the name of the main file:- FURN

Some of the other files will be extra programs loaded by the first, or data called upon as required. If there is some type of extension, chances are it's not the file that you can actually run.

A little experimentation is the best trick. At worse you'll hang the Amiga and have to start again with a warm boot. Avoid switching off and on!

Once you have finished with a program, you should be returned to the CLI prompt on most occasions. Sometimes you will have to reboot. Once back at the CLI you can move back to the ROOT directory or the first directory you were in by typing:-

CD \ or RAM:CD \

Type DIR again and you're away!

If you get really stuck, double check you have read any instructions on the Fish disk in question, then ring. Note down any problems exactly, and preferably call with the computer nearby if it is a real tricky one. ❑

Fish Disk Listing - 1-244

What is a Fish Disk anyway?

● A FISH disk is a fast, inexpensive way to collect interesting and useful software for your Amiga. The Fish disk collection has been built up by a man called Fred Fish, who lives in Canada. Fred releases new additions to the collection every month. He collects and has sent to him dozens of programs from developers, casual users and Bulletin Board Systems.

Each program included is freely distributable. This means there may be no copyright, or a copyright under which you only pay a fee for the program if you like it (shareware). Often the authors solicit funds regardless of the category. A small amount can help ensure the next version of the program reaches you quickly direct from the author along with relevant documentation.

Fred Fish has included all sorts of programs. The earlier disks require the use of the CLI for access. (See Using PD). However, many of the more recent disks can be fully operated from the Workbench.

On each Fish disk you'll find there is little spare disk space, and all the documentation is included by means of text files you can TYPE from the CLI or click on an icon to read.

The catalogue of Fish Disks is by disk number. The descriptions are fairly complete, although some editing has taken place for brevity's sake. Fred Fish initially wrote the descriptions and they provide a good guide as to what to expect.

Remember, we offer no guarantee that the public domain programs you buy will be bomb proof, or bug free. But some are very reliable, and those that aren't are normally updated, rewritten or pushed aside for a new, better programs. Public Domain software is exciting to collect. There are lots of graphics and music, utility, business and games programs to collect.

Unlike commercial programs, they're cheap and you can have a lot of fun just exploring what they do and how they work. For details on ordering, see page 96

DISK 1

amigademo Graphical benchmark for comparing amigas.
amigaterm Terminal emulation program with xmodem upload/download capability.
balls Simulation of the "kinetic thingy" with balls on strings where only the end balls move.
colorful Shows off use of hold-and-modify mode.
dhrystone Dhrystone benchmark program.
dotty Source to the "dotty window" demo on the Workbench disk.
freadraw A small "paint" type program. Free drawing, boxes, filled boxes, etc.
gad "Fun with Gadgets". Demonstration program for use of gadgets.
gfxmem Graphical memory usage display program. Cute and useful.
halfbrite Sample program that demonstrates "Extra-Half-Brite" mode on latter AMIGA's with new VLSI chip. Allows 64 colors in low-res mode, rather than 32.
hello Demonstrates creation of a simple window, "hello world".
ieffl Shows how to access the Motorola Fast Floating Point library from Lattice C. Also demonstrates the tremendous speedup obtained.
palette Sample program for designing color palettes.
trackdisk Demonstrates use of the trackdisk driver. Useful example of "raw" disk read/write.
requesters Sample program and documentation for building and using requesters.
speech Sample speech demo program. Stripped down version of "speechtoy".
speechtoy Another speech demo program. Cute. You have to see this one. Be sure to click gadget that pops up the face.

DISK 2

alib Object module librarian.
cc Unix-like frontend for Lattice C compiler.
dbug Macro based C debugging package. Machine independent.
make Subset of "unix" make command. Useful, but does not have many of the features of the full make, much less the newer "augmented-make".
make2 Another make subset command.
microemacs Small, relatively portable version of emacs. Has keyboard macros. No extension language.
portar Portable archiver. Used to bundle text file up into a single file for transmission as a unit, or otherwise handling as a single file.
xrf C cross reference utility.

DISK 3

gothic Gothic banner printer. Prints DOWN the page, rather than across, so arbitrarily long banners can be created. Send EOF (CTRL-\) to end input.
roff A "roff" type text formatter, roughly following "Software Tools" version.
ff A very fast text formatter, controlled exclusively by command line arguments.
cforth A highly portable forth implementation. Lots of goodies.
xlisp A nice little lisp implementation.

DISK 4

banner Prints horizontal banner across screen.
bgrep Another grep like utility, also using the Boyer-Moore algorithm.
bison A replacement for unix "yacc" command. This is from the GNU (GNU is Not Unix) effort. Needs work, but will probably be worth it.
bm A grep like utility using the Boyer-Moore algorithm.
grep Decus grep (Get Regular Expression and Print). Useful for finding strings in files.
kermit This is an absolutely ancient kermit, whose only saving grace is that it is small and quite portable. On the Amiga, there is no connect mode, only send and receive.
MyCLI Another CLI for the Amiga.
mandel A Mandelbrot set program.

DISK 5

cons Console device demo program with supporting macro routines.
freemap Creates a visual diagram of free memory. Comes with custom icon so can be run from workbench screen.
input.dev In combination with handler.interface.asm (supplied), lets a user trap keyboard or mouse events before they get to Intuition and if desired, instal new (phony/generated/other-devices-mouse simulations) into the input stream.
joystick Shows how to set up the gameport device as a joystick. Reports parameters received from joystick hooked to right port.
keyboard Sample program to demonstrate direct communications with the keyboard.
layers Shows use of the layers library, used by Intuition to create windows.
mandelbrot Latest mandelbrot program. New features include the ability to save images in "iff" format, for reading into Deluxe Paint or other programs that use iff.
mouse Shows how to set up gameport device as a mouse so that hooking up mouse to the right port gives access to mouse information.
one.window Produces a window with a console attached. Does graphics in the top half and limits the console activity to the lower half.
parallel Demonstrates access to the parallel port.
printer Shows how to open and use a printer, does a screen dump of the workbench screen if there is a graphics-capable printer attached.
print.support Printer support routines. Currently won't compile, missing a header file "local.h".
proctest Sample code to create a process, set up message ports, pass messages, etc.
region Demonstrates how a drawing area can be split into linked rectangular regions.
samplefont Sample font that produces clubs, hearts, spades, and diamonds as its 4fourcharacters.
serial Demonstrates access to the serial port. Requires an external terminal connected to the serial port.
singlePlayfield Creates and displays a 320 by 200 by 2 bit plane single playfield display.
speechtoy Latest version of cute speechdemo program. Comes with custom icon so can be run from a workbench screen.
speech.demo A much simplified version of speechtoy. Also includes exec support functions for extended IO requests.
txt.demo Sample program that asks AvailFonts() to make a list of the fonts that are available, then opens a window and then prints a description of the various attributes that can be applied to the fonts, in the font itself.
timer Simple timer example program. Includes dynamic allocation of data structures needed to communicate with the timer device, as well as the actual device IO.
trackdisk Demonstrates use of trackdisk driver. Useful example of "raw" disk read/write.

DISK 6

compress Reduces the size of named files using adaptive Lempel-Ziv coding. Text such as source code or English is reduced by 50-60%.
dadc A digital computer impersonating an analog clock impersonating a digital clock.
microemacs An upgraded version of microemacs originally distributed on disk number 2.
mult Reads the input comparing adjacent lines.
scales Demonstrates use of the Audio functions in the ROM to produce four voice sound.
setparallel Allows the CLI user to dynamically change any particular parallel port parameter.
setserial Allows the CLI user to dynamically change any particular serial port parameter.
sortc A quicksort based sort program, using separate driver and sort modules.
stripc Strips comments and extraneous whitespace from C source files.

DISK 7

hack A popular unix game ported to the Amiga, courtesy of John Toebes. This is Version 1.0.1.

DISK 8

hack/source Here's the source code to the game on disk seven!

DISK 9

moire Draws moire patterns in black and white in a borderless backdrop window. Currently only runs with Lattice C version 3.02, when compiled with 3.03 crashes the system.
MVP-FORTH Mountain View Press Forth, version 1.00.03A. A shareware version of forth from Fantasia Systems. Runable from the workbench, comes with icons and such.
proff Another text formatting program. This one is significantly more powerful than any of the others previously distributed on these disks.
setiace Program to toggle interlace mode on and off. When used with a black background, and amber or green characters, produces a nice CLI environment.
skewb Downloaded from a bbs with no documentation.
sparks Graphics demo that draws a "moving pathway", adding to the front and removing from the tail.

DISK 10

conquest You control an interstellar empire, decide which star systems to explore, which planets to colonize, etc. The computer will also be building its own empire and competing with you for resources.
dehex Simple little program to convert hex format file into a binary file. Reads lines of hex characters on stdin and writes 8 bit dehex'd bytes to stdout.
filezap Patch program for any type of file. Executable only, no source available.
fixobj Strip extraneous garbage off end of object files transfered with xmodem. Does not require preknowledge of actual file length.
iff Routines to read and write iff format files. Includes program to display iff files made by DPaint. Also see DPSlide program on disk 11.
ld Lists contents of specified diretory or disk, using inverse video and colors to group objects.
ls Minimal implementation of UNIX ls. Demonstrates use of UNIX style filename pattern matching code.
sq.usq Squeeze and unsqueeze, from the CPM world. Works, but "compress" from disk 6 runs almost twice as fast.
trek73 A Star Trek game. This one is just crying out to be Amiga'ized by ambitious hacker.
yachtc Dice game.

DISK 11 graphics+pics

dpslide A slide show program for displaying graphic images which are in the iff format, such as output from Deluxe Paint. Allows the user to

select the display time for each slide and the method of bringing the slide up to the screen, and then removing it. Double buffers images to improve smoothness of display.
pictures Miscellaneous DPaint and digitized pictures, in iff format. Some are rated R.

DISK 12
amiga3d Shows a rotating 3 dimensional solid "Amiga sign". No source, executable only.
ArgoTerm Yet another terminal emulator program. Written in macro assembler, so should be of interest to anyone doing serious assembly language development. Version 0.20
arrow3d Shows a rotating 3 dimensional wire frame arrow. No source, executable only.
ld4 Another directory listing program using some graphics style output. Executable only, no source available.
IconExec Icons and SetWindow These two tools allow execution of a program from an icon without having to recompile the program.
Images Miscellaneous DPaint and digitized pictures, in iff format. Some are rated R.
SetAlternate Merge the images from two icons to produce one icon with a primary image, and a possibly completely different image.
StarTerm Another terminal emulator program. ASCII and XMODEM support, telephone dialer, function keys, load file stripping, text file conversion, full/half duplex.

DISK 13
amigab It is a grab bag of basic programs, mostly untested. Nospeekeebasic so if these don't work, call someone else.

DISK 14
amiga3d Shows a rotating 3 dimensional solid "AMIGA" sign. Updated version of the program released on disk 12, now includes full source.
beep Source for a function that generates a beep sound, like CTRL-G on a VT100 terminal.
dex Program to extract documentation in a human readable format inside source files, and produce nroff style output for manuals.
dimensions Programs to demonstrate three and four dimensional graphics.
filezap An updated version of the file zap utility first released disk number 10. Can be used to patch any type of file. Nice, and VERY useful.
gfxmem An updated version of the graphical memory display program first released on disk number 1. Watch your machine's memory usage change dynamically under use!
gi Converts DPaint brush files to C source files "necessary to create an Image structure, including height, width, depth, and color information, as well as the array of data which represents the bit planes of the image".
pdterm A simple terminal emulator that does ANSI or DEC VT-100 emulation in 80 cols by 25 lines. Version 1.21.
shell A simple csh style shell with history and some other goodies.
termcap A (mostly) unix compatible implementation of a termcaplibrary.

DISK 15
Blobs A simple graphics program, reminiscent of the unix "worms" program, but in color.
Clock A simple digital clock program designed to be small and to live completely in the screen title bar, where it is out of the way.
Dazzle An eight-fold symmetry dazzler program. Really pretty!
Fish A demo program which runs an AnimOb in a doublebuffered screen with sequence cycled animation".(Basically shows a fish "swimming" across the top of the screen).
Monopoly A really nice monopoly game written in AbasiC.
OkidataDump Okidata ML92 driver and WorkBench screen dump program. Does both alpha and graphics.
Polydraw A drawing program written in AbasiC. **Polyfractals** A fractal program in AbasiC.

DISK 16 - tools
Copy of the Amiga Developer's IFF disk, received directly from Commodore Amiga sources.

DISK 17 — graphics
This is a copy of a H.A.M. (Hold And Modify) graphics demo disk received from a vendor that is producing hardware to capture such images, and software to process them.

DISK 18
AmigaDisplay Terminal emulator program. This is a modified AmigaTerm that can emulate a dumb terminal, translate line termination sequences, optionally capture or discard control characters in the captured file, use audible bell, use another font, etc.
Ash Prerelease version of a C-shell like shell program. History, command substitution, loops.
Browser Lets you wander around a file tree and peek into files, all with the mouse.
MC68010 Complete information package for upgrading an Amiga to use an MC68010 in place of the MC68000.
Multidim Lets you rotate a 2 to 6 dimensional "cube" on the screen using the joystick.
PigLatin Tired of the "say" command? This will translate and speak your input in pig latin!
Scrimper Short for "SCReen IMage PrintER". A screen dump utility which can be run from the workbench or the CLI.
Xlisp1.6 A very nice little lisp for those that want to study the internals of a real, working lisp interpreter.

DISK 19
BlackJack A line oriented (no graphics) blackjack game.
JayMinerSlides These are the Amiga slides produced/used by Jay Miner(the designer of Amiga's custom graphics chips) in his talks about the Amiga. They are all hi-res (640 x 400) and are best displayed on a long-persistence color monitor.
KeymapTest A program to test the keymapping routines and find possible bugs. Useful as an example of keymapping.
LockMon Find file locks. Useful for discovering if programs properly clean up after themselves.

DISK 20
AmigaToAtari Source code for an Amiga to Atari ST object code format converter.
DiskSalv Program to recover files from a trashed AmigaDOS disk. Can also "undelete" files deleted by mistake. Requires two disk drives. VERY useful.
Hash Small example program that computes the AmigaDOS directory hash function.
Hd Hex dump utility
MandelBrots Some mandelbrot images submitted for the "mandelbrot images contest".
MultiTasking Tutorial and example program for multitasking at the Exec level.
Pack Program to strip extraneous whitespace from C programs or header files.
PortHandler Sample Port-Handler program that performs functions of the standard PortHandler.
Random Random number generator in assembly. Much faster than versions using floating point.
SetMouse2 Program to set the mouse port to either the left port or right port.
SpeechTerm Terminal emulator that can speak the received text. Also has XMODEM file transfer.
Ted Demo version of an editor that has since been renamed as TXed (I believe).

DISK 21 graphics
This is a copy of Thomas Wilcox's Mandelbrot Set Explorer disk.

DISK 22 text
Lemacs Microemacs version 3.6 as enhanced, Has been tested on Unix V7, BSD 4.2, Amiga, MS-DOS, and VMS.
Pemacs Microemacs enhanced. Includes use of <ALT> keys as Meta keys, default buffers on buffer switch, mouse support, etc, etc.

DISK 23
Text This disk contains a significantly enhanced version of microemacs based on the version 30 release posted to usenet's mod.sources news group. Previous versions of microemacs released on these disks derived from a very old version of microemacs.

DISK 24
Conquest You control an interstellar empire, decide which star systems to explore, which planets to colonize, etc. The computer will be competing with you for resource. First distributed in executable form only on disk 10. Includes source.
Csh Second release of a csh-like alternative to the CLI, first released on disk number 14. Has alias, built in functions like "dir" for speed, history, named variables, command re-execution with substitution, etc.
Modula-2 A pre-release version of the single pass Modula-2 compiler originally developed for MacIntosh at ETHZ. Binary only.

DISK 25 games
Contains a port (executables only) of the popularUNIX game "Hack". This is V.1.0.1E., with graphics enhancements for the Amiga.

DISK 26
UnHunk Tool to process the Amiga "hunk" loadfile format. Collects code, data, and bss hunks together, allows individual specification of code, data, and bss origins, and generates binary file.
C-kermit Port of the popular "kermit" program, a flexible virtual terminal and file transfer program from Columbia University.
Ps A program to display process priorities and another program to set a process's priority to any arbitrary valid value. Very useful to provide finer control over multitasking environment.
Archx Yet more programs for bundling up text files and mailing or posting them as a single file unit.

DISK 27
ABdemos Amiga Basic demos. NewConvert FD creates .bmaps from fd files. BitPlanes finds addresses of and writes to bitplanes of the screen's bitmap. About Bmaps is a tutorial on creation and use of bmaps. LoadILBM loads and displays IFF ILBM pics. LoadACBM loads and displays ACBM pics. ScreenPrint creates a demo screen and dumps it to printer.
Disassem A simple 68000 disassembler. Reads standard Amiga object files and disassembles the code sections.
DvorakKeymap Example of a keymap structure for the Dvorak keyboard layout.
Hypocycloids An electronic Spirograph.
LinesDemo A demo program which illustrates the use of proportional gadgets to scroll around in a superbitmap window.
MemExpansion Schematics and directions for building your own 1 Mb memory expansion.
SafeMalloc Ever have a program that corrupts its own memory? This little gem can help you find the problem in a hurry. Acts as an interface between your program and the real malloc, checking for over run, under run, etc.
ScienceDemos Some science demos. Sidereal is a tutorial program which introduces the user to the relationships between Julian and calendar dates and solar and sidereal times. J2000 is a utility program which converts stellar positions, proper motion, parallax and radial velocity from the standard epoch B1950 (FK4) to epoch J2000 (FK5). Galilean is a tutorial program which determines the position of the Galilean satellites relative to Jupiter.

DISK 28
Backgammon Game in AbasiC.
Cpp A copy of the Decus cpp, ported to the Amiga. More powerful and complete than either of the built in cpp's in Manx or Lattice C.
Cribbage Game in AbasiC.
MileStone Game in AbasiC.
Othello Game in AbasiC.
Shar A program which can pack and unpack archives compatible with the Unix "shar" (shell archiver) program.
SuperBitMap an example program that shows how to use ScrollLayer, how to sync the SuperBitMap prior to printing, and how to create a dummy rastport for dumping the SuperBitMap. Works under 1.2 and up.

DISK 29
AegisDrawDemo Demo disk of the Aegis Draw program. This is the actual production program with only the "save" feature disabled and without documentation (intentionally).
Cc Version of the Unix like C compiler frontend program, for Manx C. Previous released version was for Lattice C.
Enough A new CLI execute file command that tests for various system resources such as available memory or existance of specific files, directories, or devices.
Player Animation player for Aegis Animator.
Rubik An animated Rubik's cube program.
StringLib A public domain reimplementation of the Unix string library functions.
Vt100 A vt100 emulator program with Kermit and Xmodem filetransfer protocols (based on AmigaTerm).

DISK 30
Bbs A BBS for the Amiga (BBS-Amiga Version 1.1).
FineArt This is a collection of works from some of the best of current Amiga artists.
FontEditor Does what the name implies.
MenuEditor Create and edit menus, saving the result as either a binary file for further editing or as C source for inclusion in a program.
StarTerm Version 3.0. Very nice telecommunications program.

DISK 31
Life Executes the cellular automata game of LIFE in the blitter chip. Uses a 318 by 186 display and runs at 19.8 generations per second.
Mandelbrot Latest version of Robert French's mandelbrot program, version 3.00.
MxExample Example of mutual exclusion gadget handling.
RamSpeed Program to measure raw memory speed.
et Replacement for the Manx "set" command (to set or change environment variables) with several improvements.
Tree Draws a recursive tree (green leafy type, not files).
TxEd Latest demo version of Microsmith's text editor, TxEd. This is the full production version except that files are limited to 10K bytes and the search/replace functions are disabled.
VDraw Drawing program, based on freedraw, but now transformed and enhanced beyond recognition. Draws hollow boxes, filled boxes, freehand sketches, lines, circles, and arcs. Also has area fill, text insertion. Version 1.08.
Xicon Contains two programs; Xicon which lets you use icons to call up scripts containing CLI commands, and Ticon, which is a simple program to display text files from icons.

DISK 32
Address Extended address book written in AmigaBasic.
Calendar Calendar/diary program written in AmigaBasic.
DosPlus1 First volume of CLI oriented tools for developers. Executables only.
DosPlus2 Second volume of CLI oriented tools for developers. Executables only.
MacView Allows viewing of a standard Mac-

Paint picture file in either Amiga low or high resolution (640 x 400). Executable only.
Puzzle Simulation of puzzle with moving square tiles. Executable only.
ShowHAM Program to display HAM (Hold And Modify) mode images from the CLI environment. Executable only.
Solitaire ABasIC games, Canfield and Klondike.
Spin3 Simple program that creates spinning cubes and transforms them into opart.
Sword Sword of Fallen Angel. Text adventure game written in AmigaBasic.
Trails Cute little program that leaves a trail behind the pointer when the mouse is moved. Programmable symmetry, thickness, and length. Written in Modula2 (source provided).

DISK 33
3dstars 3d version of "stars" program (also on this disk).
Bigmap Demonstrates how to use the low level graphics calls, ScrollVPort especially. Scrolling around inside a very big bitmap.
Dbuf.gels Sample program that demonstrates the animation routines for Bobs and VSprites.
DiskMapper Displays sector allocation of floppy disks.
MemView Program which sets up a direct window into RAM, thus dynamically displaying the contents of memory.
Oing Displays a window full of little bouncing balls.
ScreenDump Dumps rastport of highest screen/window to printer.
Sdb Simple database program, originally released on a DECUS VAX SIG tape.
Sproing Same as Oing but includes sounds of balls colliding with boundries.
Stars Displays a screen full of stars, reminiscent of a view from the starship Enterprise's flight deck.
TermPlus Yet another variant of AmigaTerm. This one includes improved ascii capture, CRC and checksum xmodem protocol transfers, CompuServe Bprotocol transfers, a phone library, function key support, and limited AmigaDOS functions.
Vt100 Release 2.0. Includes support for function keys and script files.

DISK 34
Alint Support files for Gimpel lint to make it useful on the Amiga.
Blink A linker written as a replacement for Alink. Fully Alink compatible, supports many additional options not found in Alink. Faster than Alink and generates smaller executable files. Version 5.7
Browser Updated version of the browser program released on disk number 18.
Btree Routines to implement a Btree algorithm and several accompanying tests, apparently derived from the single file version also included on this disk under "Btree2".
Btree2 Previous (original) version of btree routines.
Calendar Appointment calendar that lets you visually add and update appointments. Can also run in background and remind you 15 minutes before any scheduled event.
Less Like Unix "more", only better, with forward and backward scrolling, searching and positioning by percent of file and line number, etc. Very useful!
NewFonts Set of 28 new Amiga fonts.
Pr A background print utility with several options for letter quality compressed mode and line numbers.
Requester A file name requester that looks like the one used in Deluxe Paint, and a sample program for using the requester.

DISK 35
ASendPacket Example program for sending multiple packets asynchronously to dos handle.
ConsoleWindow Example program for finding the intuition pointer to an AmigaDos CON: or RAW: window, so you can do Window To Front, graphics, etc. (Requires AmigaDos 1.2)
DirUtil Nice little program to wander around directory tree using a windowing interface and performing various operations on files.
DirUtil2 Another variant of dirutil.
FileRequester A very nice file requester module for lattice C programs, along with a demo driver program.
MacView Allows viewing of standard MacPaint picture files in either Amiga low or high resolution. Executable, sample pictures, and icons (version on disk 32 did not include pictures). **Plop** Short, simple, nofrills IFF reader program, and a sample picture made using a ray tracing algorithm.
PopCLI Provides a simple way of starting another CLI at any time without having to load workbench or exit whatever program you may be using. Also has a builtin screen saver mode.
QuickCopy Three versions of quickcopy, a nice little fuff disk copier. Two of the versions are capable of making backup copies of "protected" Electronic Arts' disks.
ScrollPf Creates and displays a 400 by 300 by 2 bit plane playfield on top of a 320 by 200, 2 plane deep playfield, as a demo of dual playfield display.
SendPacket General purpose subroutine to send AmigaDos packets.
SpriteMaker Lets you paint sprites and then converts the image into a C data structure to be used in programs. Suggested shareware donation of $15 for source code and updates.
Tracker Program which converts a bootload disk (I.E. a kickstart disk) into a group of files for electronic transmission and reassembly.
TriClops Very nice graphics oriented 3D space invasion game.
Tsize A simple utility to print directory tree sizes. Displays the total size of all files and subdirectories within a given directory.
Unifdef Useful program for removing ifdef'ed sections from a file while leaving the file alone.
Vttest Program to test compatibility of vt100 compatible terminals and terminal emulators.

DISK 36
Acp A copy program with filename expansion and argument interpretation like the unix cp.
Clock Updated version of the clock program released on disk number 15. Adds seconds display, free memory display, and faster updates.
Csh Csh like alternative to the CLI, with changes to compile under Manx with 16bit ints. Version 2.01A.
DietAid Diet planning aid to allow the user to compile lists of ingredients (recipes) and automatically compute calorie totals, etc.
Echo Improved echo command with options to control color, screen placement of text, etc.
FixHunk A program to modify executable files to allow them to run in external memory.
Fm File mapper program. Uses trackdisk device to grab sectors and traverse the filesystem to find out sectors.
KickBench Instructions and programs for creating and using a combined KickStart and WorkBench disk, so only one disk is need to reboot. Allows the system to reboot unattended after a power failure.
Lex A program (not to be confused with the Unix lex program which is a lexical analyzer generator) which computes various readability metrics for text files. Computes GunningFog, Flesh, and Kincaid indices.
TunnelVision ABasiC maze game, with a 3D perspective view from inside the maze.
Vc Visicalclike spreadsheet calculator program.
Vt100 Version 2.2 of vt100 emulator program including Xmodem and Kermit file transfer protocols.
YaBoing Game program demonstrating hardware sprite usage, including collision detection.

DISK 37
It is port of Timothy Budd's **Little Smalltalk** system, done by Bill Kinnersley at Washington State University.

DISK 38
CSquared Implementation of Circle Squared algorithm. Produces wildly colorful but mathematically precise patterns.
FixObj Strip extraneous garbage off the end of object files transfered with xmodem. Does not require preknowledge of actual file length.
Handler An example that implements an AmigaDos Handler (device)in nonBCPL format.
Hp10c Program that mimics an HP10c (Hewlett Packard calculator), in TDI Modula2.
IffDump Two programs for manipulating IFF files.
Jsh A simple command line interpreter drawing on features from the BSD C shell.
NewStat Replacement program for the AmigaDOS STATUS command.
Reversi Reversi game. Version 6.1.
UUdecode Programs to encode/decode binary files for transmittal via mail, or other textonly methods.
Vdraw Drawing program, based on freedraw, but now transformed and enhanced beyond recognition. This is version 1.14. Shareware program (suggested $15 donation).
VoiceFiler Voice filer program for Yamaha DX series synthesizers. Voices are transfered to and from the Amiga over MIDI.
Window Sample program which shows how to create a DOS window in a custom screen.

DISK 39
AnsiEcho Some commands written in assembler. Includes an echo command, touch, list, cls(clear screen), and ask (wait for user input).
Display Graphics display program to display HAM images from a ray tracing program. Includes some really spectacular pictures.
Driver Demo devicedriver in source. Functions as a RAM disk for demonstration purposes.
Xlisp Small lisp type interpreter, binary only (source to older version was on disk 18). V.1.7.

DISK 40
Ahost Amiga terminal emulator featuring ANSI terminal emulation, file transfer with CompuServe's BProtocol, Kermit, and Xmodem, user definable function keys, script language, RLE graphics and a special conference mode for use with CIS. Version 0.9.
AmigaMonitor Dynamically display the state of the machine, including open files, active tasks, resources, device states, interrupts, libraries, ports, etc.
Arc The ubiquitous compressing archiver program that has become the de facto standard for distributing binaries and multifile postings on most BBS's.
AreaCode Program which decodes area codes into state and locality.
Blink A linker written as a replacement for Alink. Fully Alink compatible, supports many additional options not found in Alink. Version 6.5.
Cosmo An "asteriods" clone. Suggested $6 donation.
Dg210 Data General D210 Terminal emulator. Suggested $12 donation.
DirUtil Nice little program to wander around directory tree using a windowing interface and performing various operations on files. V 1.4.
DOSHelper Windowing program to print help information about various dos commands. Version 1.60. Suggested $10 donation.
PagePrint Prints text files with date/time header, page breaks, and line numbers. Suggested $10 donation.
PopCLI Provides a simple way of starting another CLI at any time without having to load workbench or exit program.
SpriteEd Lets you simultaneously edit two sprite pairs to form a double wide sprite image. Suggested $10 donation.
XSpell A spelling checker to proofread text files and then allow you to move through the document, deciding what to do with the misspelled words.

DISK 41
AmigaVenture A program which allows you to write your own Infocomstyle adventure programs in AmigaBasic. It is a full featured adventure parser, including direct and indirect objects, multiple object processing, adjectives, automatic ambiguity resolution, and subordinate clauses. The parser includes support for one, two, or threeword verbs, and a full set of object manipulation primitives.
Csh Version 2.03 of Matt's Cshlike shell. Executable only.
abug Macro based C debugging package. Machine independent. First released on disk #2. This version includes some bug fixes and enhancements.
DualPlayField An example of using a dualplayfield screen, using a method contrary to documentation in the Intuition Manual.
GetFile A very nice file name requester. Unlike the earlier version on disk #35, this version includes source code.
LatticeXref A cross reference listing of all symbols defined in the Lattice 3.10 header files.
Lines A line drawing demo program, reminiscent of the "sparks" program on disk #9.
SetFont A program to change the font used in a workbench screen. Includes several sample fonts of various sizes.
Vt100 Version 2.3. Includes xmodem and kermit file transfer protocols.

DISK 42
This diskette contains the Amiga version of MicroGNUEmacs (MG), a small but powerful text editor that runs on many other computer systems besides the Amiga.

DISK 43
BasicBoing AmigaBasic program which shows animation by page flipping. Precalculates all views of a rotating 3 dimensional cube and then cycles through them rapidly for animation.
Bbm Demo copy of B.E.S.T. Software's Business Management System. Full implementation with file sizes reduced for demo purposes.
BbsList A list of Bulletin Board Systems which support the Amiga.
Cc C compiler frontends for Manx and Lattice C. These automatically filter off the annoying banner messages from various passes of the compilers.
Copper A copper list disassembler. Dumps contents of a hardware copper instruction list.
InstIFF Converts sampled sound files from the Instruments dealer demo disks to IFF sampled sound files in a FORM 8SVX.
PopColours Lets you change the Red/Green/Blue components of any color register, on any screen currently in the system. Very well done. Version 1.0
SpriteClock A very simple clock that uses a sprite as its display medium, thus allowing it to be displayed on top of all other screens. Includes source in assembly language.
STEmulator Turns your Amiga into an Atari ST (sort of). Be sure to read the README file.
WBrun A program designed to allow any program to be invokedfrom CLI yet behave as if it were invoked fromWorkbench. Workbench need not be loaded, thus saving memory.
Wild Two versions of Unix shell style wildcard matching routines.

DISK 44
Icons Some miscellaneous icons for your viewing pleasure.
NewIFF Some new iff material dealing with sampled voice and music iff files.
RayTracePics Ray tracing pictures, some of which appeared on disk number 39, but now in IFF HAM format for MUCH faster loading and compatibility with existing IFF tools.
ViewILBM Reads an ILBM file and displays as a screen/window until closed.

DISK 45
Clue Clue board game. Nice.
Make Another version of make - more complete than many other PD makes.
Pictures Miscellaneous pictures.
Update Used to update an older working disk with files from a newly released disk.
Wherels Searches a disk for the first or multiple occurances of a file with a given name.

DISK 46
Asm A shareware macro assembler. Asm is a 68010 macro assembler compatible with the assembler described in the AmigaDOS manual.
CheckModem Provides for executing other programs from your startup file, if there is actually a modem connected to the serial port.
Egad A gadget editor from the Programmers Network. Very nicely done and very useful.
Jive A filter program which transforms its standard input to "jive" on its standard output.
My.lib A binary only copy of Matt Dillon's alternate runtime library.
ProfIMacros Subset implementations of the Berkeley "ms" and System V "mm" macro packages, for the prof program.
ValSpeak Filter program which transforms its standard input to "valspeak" on its standard output.

DISK 47
3DArm The first stage of a larger project to study goal directed animation of articulated objects(objects which can move with various degrees of freedom but are constrained by attachment to other links within the object). This program demonstrates goal directed animation with a simulated 3 dimensional robot arm.
Juggler Stunning animation of a robot juggler with ray traced reflective spheres. Uses HAM mode display and sound effects to boot!
Vt100 V.2.4 of vt100 terminal emulator. Xmodem and kermit file transfer protocols.

DISK 48
Bru Alpha 1 version of a hard disk and/or file archiver written for Unix. This is a vanilla port, with very little Amiga smans, but it is usable.
Comm A vt100 like terminal emulator with built in support for key functions and a phone number database. Version 1.30.
Csh2.04 Version 2.04 of Matt's cshlike shell. Includes source.
Csh2.04M Version 2.04 of above, heavily modified for Manx C. Includes source.
Diskperf A disk benchmark program which runs on both Unix and the Amiga.
Du Computes disk usage of a file or directory (including subdirectories). Very handy.
MemWatch Program to sit in the background and watch for random trashing of low memory by an application under development.
Profiler A realtime execution profiler for Manx 3.30E. Includes source.

DISK 49
Cycloids An updated version of the hypocycloids (electronic spirograph) program first released on disk number 27.
DirUtil An enhanced version of the dirutil from disk number 35. Dirutil is a program to wander around a directory tree and perform various operations on files.
Multidef A program to scan a collection of object and library files and identify multiply defined symbols.
MyUpdate A disk update utility that also provides support for automatically stripping comments from C header files and for interactive verification on a per file basis.
Plot Program to compute and plot 3 dimensional functions.
Polygon A moire type pattern generator but with color cycling.
QMouse A program to query the status of the left mouse button and return a status code. Also includes a separate program to toggle interlace on and off.
Touch A simple command to set the date of a file to the current date.
Trees Another "tree growing" program, similar to the one on disk 31, but more extensive.

DISK 50
Asm A shareware macro assembler. Asm is a 68010 macro assembler that is compatible with the assembler described in the AmigaDOS manual. This is version 1.1, an update to the version on disk 46.
BreakOut A 3D game. Requires 3D glasses.
DiskZap Program to "edit" a disk, sector by sector. Version 1.1.
FirstSiliCon A smart input line interpreter that provides a separate command window with full editing and recall of previous commands.
Missile A nice "missile defense" game. Written 100% in assembler (source available from author) and is very fast!
PerfectSound PerfectSound demo, with a sound editor and sample sound files.
Sizzlers Graphics demo programs.
UnixArc A version of arc suitable for Unix System V.
Wombat Yet another terminal emulation program. Version 3.01. Has user settable cursor, programmable function keys, vt102 emulation, autodialing, loadable settings files, and more.

DISK 51
Bison A replacement for unix "yacc" command. From the GNU (GNU is Not Unix) effort.
Compress This is an update to the compress version released on disk number 6.
Cos A "Wheel Of Fortune" style game in AmigaBasic.
DifSsed Dif produces a difference file which lists the line by line differences between any two text files.
Sq.Usq Portable versions of the CPM sq and usq utilities.

DISK 52
Assign Replacement for AmigaDOS assign command, written in C.
Fractal A fractal program which produces a random square fractal terrain.
HAMpoly A polygon drawing demo which uses HAM mode to produce polygons of any of the possible 4096 colors.
MxGads Demonstrates how to make mutual exclusion of boolean gadgets work, even if they contain GadgetText.
Poly A polygon drawing demo using the AreaMove, AreaDraw, and AreaEnd functions.
Tek4010 A Tek 4010 emulator.
Vdraw1.16 Shareware drawing program . This version uses menus but includes some items not in version 1.19, also on this disk.
Vdraw1.19 Latest version of Vdraw, with a completely new iconic user interface, and other new features including a color palette mixer and DPaint style brushes, extended cu interface.

DISK 53
Animations Some animations made with Aegis Animator. Includes a player program.
ARCre Creates rename scripts so that files with long names can be easily archived and dearchived correctly by "arc".
Arp Some preliminary programs from a program started on BIX by Charlie Heath to replace all the BCPL AmigaDOS programs with assembly equivalents. Includes"break", "cd", "chmod", "echo", "filenote", and "makedir".
Compiler An optimizing C compiler for the 68000. Has yet to be fully ported to Amiga.
SpreadSheet A simple "Visicalclike" spread sheet calculator.
TarSplit A port of the OS/9 program that extracts files from Unix tar archives.
UUencode Programs to encode/decode binary files for transmittal via mail or other textonly methods. Update to the version on disk 38, and includes a simple linebyline checksum technique that can read and write files compatible with the older uuencode/uudecode.

DISK 54
Hanoi Classical demo program for recursion. Solves the towers of hanoi problem in a workbench window of its own.
ISpell A quick and dirty port of a Unix version of a freely distributable screen oriented, interactive, spelling checker. I use the Unix version daily and it is very nice. You will need expansion ram to run this with the supplied dictionary, as it loads the entire 300K hashed dictionary into memory. A hard disk is also recommended.
Ing The next step in the "boing wars". Turns a nice screen full of little windows into a screen of lots of bouncing little windows. Cute!
Lav A "title bar type" program that displays the number of tasks in the Amiga's run queue, averaged over the last minute, 5 minutes, and 15 minutes.
MidiTools Simple programs to play and record through the MIDI I/F. Untested (I have no MIDI hardware).
MoreRows A program to make the workbench screen larger than normal.
Tilt This one makes your Amiga look like it didn't pass Commodore's vibration testing.

DISK 55
Csh Version 2.05 of Matt Dillon's csh like shell, modified for Manx C.
NewStartups A couple of new C startup modules. AStartup.asm is the source to AStartup.obj, with 1.2 fixes and better quote handling. TWStartup.asm is like AStartup.asm but opens a stdio window, using a user supplied window specification, when executed from workbench.
Palette A tool which allows you to change another program's custom screen colors.
PipeDevice A working 'pipe:' device, which allows the standard output of one process to be fed to the standard input of another process, with both processes running concurrently.
ScreenSave A program to save a normal or HAM mode screen as an IFF file. Also creates an icon for the saved file.
ShangaiDemo Demo version of the Activision game "Shanghai".
SoundExample A double buffered sound example for Manx C using 16bit ints, small code, and small data.
Vsprites A working vsprite example.
Vt100 Version 2.6 of vt100 terminal emulator with kermit and xmodem file transfer.

DISK 56
ClipBoard Clipboard device interface routines to provide a standard interface, such as Open, Close, Post, Read, Write, etc.
ConPackets Demos the use of DOS packets, finding the Window pointer and ConUnit pointer of the CLI window, toggling Raw mode, getting cursor position and limits from the ConUnit, and ESCsequence cursor positioning.
GetDisks Sample program to find all available disk device names and return them as a simple exec list.
GetVolume Sample program to get the volume name of the volume that a given file resides on.
Icon2C Reads an icon file and writes out a fragment of C code with the icon data structures, for inclusion in a larger program.
MergeMem Program which attempts to merge the MemList entries of sequentially configured ram boards. When successful, allows allocating a section of memory which spans board boundries.
mCAD An object oriented drawing program, version 1.1. Uses a small set of graphics primitives (like "line", "box", and "text") and a small set of editing functions (like "move", "size", and "rotate"). While drawing and editing, the user can call on other functions to modify the display; to zoom in, slide around, etc. Shareware

DISK 57
CutAndPaste Public domain implementations of the Unix cut and paste commands. Includes source.
GraphIt A program to plot most simple functions in 2 or 3 dimensions, as well as 2d parametric equations in term of t. Includes source.
Juggler Stunning animation of a robot juggler with ray traced reflective spheres. Uses HAM mode display and sound effects to boot! This is version 1.2 and apparently fixes some bugs in the original version released on disk number 47.
MouseReader Shareware program, submitted by the author, to read text files and view iff files using only the mouse.
Ogre A game of tactical ground combat in the year 2086.
Splines Program to demonstrate various curve fitting and rendering techniques.

DISK 58
ASDGrrd Extremely useful shareware recoverable ram disk. This AmigaDOS device driver implements a completely DOS compatible disk device in memory that survives resets, guru's, and crashes. An absolute must for those with lots of ram. Binary only.
BigView Displays any IFF picture, independent of the physical display size, using hardware scroll. Includes source.
EGraph Egraph reads pairs of x and y values from a list of files and draws a formatted graph. Supports four unique curve fonts; solid, dashed, dotted, and long dashed curves. Maximum number of data points unlimited. Binary only.
HyperBase Nice little shareware database management system. Version 1.5. Binary only, source available from authors.
MemClear Walks through the free memory lists, zeroing free memory along the way, and coalescing memchunks that have contiguous address spaces. Includes source.
NewZAP A third generation multi purpose file sector editing utility, from the author of FileZAP
RainBow Marauder style rainbow generator. Installs a user copper list such that the background color is changed every few scan lines.
SmusPlayers Two SMUS players, to play SMUS IFF music formatted files. Executables only.
View A tiny ILBM viewer, for use with either the CLI or WorkBench.
WBdump JX80 optimized workbench printer that does not use DumpRPort. Much more efficient than the Amiga JX80 driver for full screen dumps.

DISK 59
Browser Another version of the browser program released on disks 18 and 34.
Browser2 This browser type program is apparently not based on the original version.
Clock Another clock program, comes in several flavors depending upon features desired, which include using alternate fonts, using alternate colors, setting the time, etc. Binary only.
Dme V.1.22. A simple WYSIWYG editor designed for programmers. It is not a WYSIWYG word processor in the traditional sense.
DropCloth Dropcloth replaces the standard blank WorkBench backdrop with a pattern, of setable intensity. Binary only.
DropShadow A program that makes your WorkBench windows have dropshadows. Neat. Binary only.
FixWB A program similar to "DropCloth" (also on this disk), but not fully working yet.
mCAD An objectoriented drawing program, version 1.2.2. Uses a small set of graphics primitives (like "line", "box", and "text") and a small set of editing functions (like "move", "size", and "rotate"). While drawing and editing, the user can call on other functions to modify the display; to zoom in, slide around, superimpose a grid.
Robotroff Cute little display hacks.
Supermort A general compounding/ amortization routine, using the intuition environment, which can be used for mortgage/loan computations. Binary only.

DISK 60
Blitz Blitz is a small program that is designed to be loaded into memory and that sits in the back-

ground until activated by its hotkey. It allows you to view a text file, much like a TYPE command, only that it lets you move forwards and backwards through the file. Binary only

BlitzFonts Blitzfonts makes text output up to 6 times faster, transparently to well behaved programs. Binary only.

HandShake Handshake is a full featured VT52/VT100/VT102 terminal emulator. The author has taken great pains to support the full VT102 spec. This is version 1.20a, binary only.

Med Yet another Amiga text editor. This one lets you edit up to 36 files simultaneously and makes extensive use of the mouse.

PrtDrvGen Program to automatically generate custom printer drivers.

Show A nice, very small slideshow type program, version 2.1, binary only.

Uedit Version 2.0 of this nice shareware editor. Has learn mode, a command language, menu customization, and other user configurability and customizability features. Binary only.

Ueturbo Example of extensive customization of Uedit to set up a nice development environment. Includes source.

DISK 61

ATPatch A program which reportedly will patch the Amiga Transformer for operation under Workbench 1.2 (I don't have one so couldn't test it). Includes source.

FillDisk Disksalv has been known to find some rather interesting things in the free blocks of some production disks from companies that should know better. This little hack makes sure you don't get caught in the same trap, by scribbling the disk's free blocks in a totally safe manner. Includes source.

LPatch Patch for programs, such as 'Atom', with bad 1.0 Lstartup code, which abort during startup under 1.2 with 00038007 alert (can't open dos library). Includes source.

MicroEmacs Version 3.8b of Daniel Lawrence's variant of Dave Conroy's microemacs. This version is greatly enhanced over the last version distributed on disk number 22.

PearlFont Font similar to Topaz, but with smoothed out edges and more rounded characters.

Terrain Program which demonstrates generation of good looking pseudorandom scenery.

VSprites Vsprite example from Rob's book "Programmers' Guide ToThe Amiga". Produces 28 VSprites onscreen simultaneously, using only three distinct sets of colors.

DISK 62

This disk contains a port of the popular UNIX game "Hack", done by John Toebes and the crew at the Software Distillery.

DISK 63 games

This disk contains a port of the popular UNIX game "Larn", done by Edmund Burnette and the crew at the Software Distillery. This is version 12.0B.

DISK 64 language

This is a copy of the Amiga Developer's IFF disk, received directly from Commodore Amiga, with permission to place in the library and redistribute. It is an update to disk number 16.

DISK 65

Bawk Text processor inspired by the Unix awk utility. Bawk searches files for specific patterns and performs actions for every occurance of these patterns. The patterns can be regular expressions. The actions are expressed using a subset of the C language. Includes source.

CloseWB Simple program for use with MWB (also on this disk) to close a current WorkBench screen, and let you open WorkBench on a custom screen.

Cookie Fortune cookie program. Includes source.

JTime Detailed instructions, including schematics in IFF format, for building and installing a battery backed up realtime clock. The clock goes on the joystick port (aka mouse port 2).

MenuBuilder A program which automates the process of building menus. It takes a simple text file and generates a C source file with all the needed structures. Version 1.0, includes source.

MWB A program which will create a new 'WorkBench' screen and route by request OpenWindow calls meant for the WorkBench to these new screens. includes source.

NewPackets Tutorial downloaded from BIX CA support section, which describes some new packets and structures in 1.2 AmigaDos.

PascalToC A Pascal to C translator program which is supposed to correctly handle function, procedure, and most type declarations.

Prep Version 2.1 of a Fortran preprocessor called 'prep', an alternative to ratfor.

RunBack Allows you to start another program which is independent of the CLI window.

SunMouse Makes your mouse behave like the Sun Microsystem Sunwindows mouse. You no longer have to 'click' in a window to make it active. Just move the mouse pointer into the window and start typing. Version 1.0, binary only.

DISK 66

AmScsi Preliminary documentation for a hardware project to build a SCSI controller board. The design does not support DMA or AUTOCONFIG'ing.

Asm68k Full featured macro assembler, version 1.0.1, binary only. Well documented.

Assigned Some code showing how to find out whether or not a name has been assigned (via the dos ASSIGN command) before using it. Includes source.

Dk A little display hack. Written in Modula2, includes source.

Flip This one is quite cute also. Written in assembler, includes source.

Foogol Just what you've been waiting for, a foogol cross compiler for your Amiga that generates VAX assembly code.

Free Free returns the available free bytes on any storage device that AmigaDos sees as a drive.

MallocTest A malloc/free test program that allocates and frees randomly sized pieces of memory with random lifetimes, and fills them with patterns that can be checked for corruption.

Melt Another display hack. Includes source.

Nart Another display hack. Includes source.

Purty Provides an easy way to change some common printer settings via a small window with several gadgets. Binary only.

RayTracer A simple ray tracing program. It is capable of depicting up to 150 balls and a plane that is covered with a tiling of any bitmapped picture. Binary only and sparce documentation.

SendPackets Updated versions of the ASendPacket and SendPacket examples from disk number 35. A SendPacket is an example program for sending multiple packets asynchronously to a dos handler. SendPacket is a general purpose subroutine to send AmigaDos packets. Includes source.

SnapShot A small utility for dumping screens. This one works like POPCLI and stays dormant until you press CtrlEsc. Binary only.

TagBBS Version 1.02 of a shareware BBS system. Suggested donation $25. Binary only.

DISK 67

AmCat Shareware disk cataloging program.

AmigaSpell Very nice intuition oriented shareware spelling checker, version 2.0, binary only.

Bouncer A 3D simulation of a bouncing ball written in MultiForth, with source included.

Comm Another nice terminal program. Version 1.33, binary only.

Dux5 Latest version of directory utility which is a descendant of the original dirutil program by Chris Nicotra. Includes source.

HexCalc Nice little hex/oct/dec/bin calculator and converter. Binary only.

Icons A collection of some icons for general purpose programs and some particular programs. The "documentation" icon is particularly cute.

Mandala A mandala graphic program with sound, sort of Eastern music. Binary only.

PersMail Demo version of shareware personal/personnel file manager. Includes list processing, capability to run mailing labels, mail merge output feature, and more. Demo version is binary only and limited to input mode.

RSLClock Another nice little clock utility that can sit around in your title bar. Lots of options.

RTCubes A little graphics demo that shows 16 3D cubes in a 3D space, all being translated, rotated, and drawn on the screen in real time. Binary only, takes over the machine.

Wheel Nice little "Wheel of Fortune" type game, written in AmigaBasic.

DISK 68

This diskette contains the latest Amiga version of **MicroGNUEmacs** (MG 1b), a small but powerful text editor that also runs on many other computer systems besides the Amiga. One of MG's major goals is to be compatible with its "cousin" GNU Emacs, so certain features you may have seen in other versions of MicroEmacs may work differently here, or not exist. Hopefully, you'll find the added features MG provides to be worth the trouble it takes to make the switch. As well as the commands available on "all" systems MG supports, Amiga MG has many Amiga specific features: the Amiga mouse (with 24 different functions!), Intuition pulldown menus, the Browser (a very nice way to select files), Amiga function keys, a full-screen editing window, and support for using a different text font in the editing window.

DISK 69

Asm68k Full featured macro assembler, version 1.0.3, binary only. Well documented.

BlitLab Lets you experiment with the blitter, to your hearts content, in relative safety.

Conman A replacement console handler that provides line editing and command line history. Is completely transparent to any application program that uses CON: windows.

Console Console is a try at a new set of routines to get around some of the problems with the standard system routines, and includes some simple graphics routines.

Dk A little display hack. Written in Modula2, includes source. Slightly newer than version on disk number 66

Frags Reports the number of free blocks of size 2^(n1) to (2^n)1 for n up to 24 (blocks of max size 16Mb1). Translation: Gives you some idea of how fragmented your free memory is. Includes source.

IconType Change the type of an icon after editing with IconEd. Types are Disk, Drawer, Tool, Project, Garbage, and Device. Includes source.

Make Public domain make from mod.sources, Volume 7, number 91.

MonProc A simple program to allow you to monitor any process for packet activity. Includes source.

MouseClock Turns your mouse pointer into a digital clock with updates once per minute.

Sb Structure browser, displays system structures via pointers found in other structures.

Spew Program which generates amusing 'National Enquirer' type headlines.

Spool The SPOOL system consists of 3 programs: A queue manager, a printer driver, and a SPOOL request program.

Wc A "word count" program, ala Unix's wc, that is faster because it doesn't count what you don't ask for, plus some other improvements.

DISK 70

AmigaMonitor Dynamically display the state of the machine, including open files, active tasks, resources, device states, interrupts, libraries, ports, etc. Display window into memory. Version 1.13, binary only (source available from author). Author suggests $15 donation.

Arc The ubiquitous compressing archiver program that has become the de facto standard for distributing binaries and multifile postings on most BBS's. This is Amiga version 0.23, a port of arc version v5.0, binary only. Author suggests $35 $50 donation.

BlackBook Keeps track of those important phone numbers and addresses. Shareware, author suggests $30 donation.

DoTil Lists, in alphabetical order, all files on any two directories, showing file size, creation date/time, and amount of free disk space. Also copies, renames, or deletes files and/or directories, and moves files from one directory to another. V2.0, shareware, suggested $15 .

GravityWars The object of this game is for one player to hit the other player's ship with a missile, before being hit yourself. The ships and planets don't move, but aiming the missile in the presence of gravity fields and black holes makes hitting your target difficult.

Jobs A alternate user interface to WorkBench or CLI. Version 2.1, binary only.

Lens This program magnifies a small area surrounding the pointer and displays it in a separate window. Version 1.0, binary only.

Life3d A 3d version of the classic cellular automaton game. Shareware, author suggests $20 donation. Version 1.2, binary only.

Logo A logo interpreter, with user interface like the Apple II logo. Suggested donation $5.

SetKey Keymap editor, version 1.0 demo. Version without save function disabled is $25. Binary only.

Vpg Video Pattern Generator. Creates displays useful for adjusting monitors and setting up live shots with center crosshair, frame, dots, H lines, V lines and adjustable rectangle. V. 1.0.

DISK 71

AirFoil Airfoil generator utilizing the Joukowski transformation. Generates airfoil models as well as their corresponding streamline and pressure distributions. Includes source.

AmiBas Some miscellaneous AmigaBASIC programs, including a 3D plot program, a calei-doscope, a CA logo drawing program, a file comparison utility, a string search program, etc. Includes source.

Blocks A variation of "lines", but with variable color blocks. Binary only.

Comm Another nice terminal program. Version 1.34, binary only.

DiskX A handy utility for poking around in the guts of an AmigaDOS file system. Binary only, but source available from author.

Fpic Fpic is an image processing program, designed specifically to be used in conjunction with digitized (DigiView) lores black and white IFF picture files. Binary only.

IconMk Builds icons for files that were created without them. V.1.2a, binary only.

Icons Various new icons.

NewFonts Two new fonts; shalt18, an electronic ciruit element font, and ibm 5, a PC like font, different from that for Sidecar.

PetCLI An Amiga BASIC program that allows editing in CLI command lines (similar to the PET and MYCLI). Includes source.

PWDemo Demo version 1.2 of the commercial product PowerWindows. Aids in creation of custom windows, menus, and gadgets.

Rot Generates and displays 3D objects. Two pieces, object editor and action editor. Object editor creates 3D objects and the action editor defines up to 24 3D views of an object (can be quickly cycled to get an animation effect).

TimeSet Handy little utility to set the system time from the workbench environment, without resorting to preferences. Binary only.

DISK 72 pics

It's been quite a while since the last disk with any pictures, so this one is just chock full of them. There are HAM pictures, high resolution B and W digitized pictures, and some interesting freehand drawings.

DISK 73

Add Lets you create keyboard shortcuts for selection of menu items in programs where the author did not make provisions for such shortcuts, or chose ones that disagree with you. Also includes "until" which waits for a specific window to be created. Shareware, includes source.

AutoIconOpen
Example code to fool WorkBench into thinking it is receiving mouse inputs that select and open icons. Includes source.

Dio A module which makes it very easy to use EXEC devices, such as the 'serial.device'.

Dissolve A program like ViewILBM, but the image slowly coalesces as pixels are added in random patterns. Includes source.

DTerm Small, flexible, terminal program with intelligent data mapping, intelligent keyboard mapping, dynamic menus, intelligent command language, asyncronous IO, duplex control, and a state machine structure allowing you to build any automatic control structure you wish (from autoredial, sequence dialing, to autologon). Version 1.10, binary only.

Expose Program which will automatically cause all screen drag bars and screen depth arrangers to become exposed.

Lit Lit filters a file to stdout, showing all characters in an unambiguous format. Version 2.0, includes source.

Lmv This shareware program is called "Long Movie". It loads up to 100 IFF graphics files and displays them in forward or reverse order, at up to 19 frames per second, to create computer animations for VCR recording. Binary only, source available from author.

MouseOff Will cause the mouse pointer to disappear and then reappear if mouse movement is detected. It will disappear again after 10 seconds of no mousing around. Includes source.

ParOut An example that uses the parallel port resources) to access the parallel port directly.

PenPalFont A font which will make your six year old feel right at home in a CLI window. Cute.

RunBackGround This program performs a function similar to that performed by RunBack on disk number 66, but this one is in C rather than assembler. Includes source.

SnapShot A small utility for dumping screens. This one works like POPCLI and stays dormant until you press CtrlEsc.

Type And Tell Example program that demonstrates installation of an input device handler before the Intuition one. This example traps all keys typed by the user and pronounces them in real time. Includes source.

Xplor A program that scans all the system lists that start in ExecBase and prints out their names and addresses at which they start. Includes assembly source.

DISK 74

Cled A simple command line editor which allows you to edit your commands before and after they are processed.

Control Program which provides finer control over the printer device. When it sees a DUMPRPORT, it fires up a requestor and lets you play with the values being passed in the Request block. Includes source.

Dme V.1.25. Dme is a simple WYSIWYG editor designed for programmers. Update to version on disk number 59. Binary only.

DropShadow A program that makes your WorkBench windows have dropshadows. Update to version on disk number 59, this one has slider gadgets to adjust the 3 dimensional distance between window planes and the shadow darkness. Neat, version 2.0, binary only.

Funds AmigaBASIC program to track the prices of mutual funds or stocks. Includes source.

Less Like Unix "more", only better, with forward and backward scrolling, searching and positioning by percent of file and line number, etc. Very usefull

Makemake Reads C source files and constructs a vanilla makefile in the current directory. Includes source.

mCAD An object oriented drawing program, version 1.2.4. Uses a small set of graphics primitives (like "line", "box", and "text") and a small set of editing functions (like "move", "size", and "rotate"). While drawing and editing, the user can call on other functions to modify display.

Random Simple random number generator in C. Includes source.

TDebug Monitor a device by intercepting the EXEC SendIO and DoIO vectors. This will give you most of the IO request information for any device. Version 1.00, includes source.

Units Units conversion program, including a chart option which allows you to create charts of conversions. Nifty. Includes source

XCopy A replacement for the AmigaDOS copy command. Preserves the file date, provides an "update only" option, and uses Unix type wildcards. Binary only.

DISK 75

Bezier Simple programs to allow you to fool around with Bezier curves.

BSplines Simple program to fool around with BSPLINES, all the Bezier programs described above. Includes source.

Comm Source release for comm version 1.34. Last release on disk 71 was binary only.

Copy A replacement for the AmigaDOS copy program that is upwardly compatible, plus includes some new features.

Diff A simple version of diff. Includes source.

DuM2 A version of the ever popular directory utility (dirutil) but this one is written in Modula 2 and includes source. Dirutil is a program to wander around a directory tree and perform various operations on files.

Eless A faster directory lister, that also sorts entries and displays directories in the current cursor color (ala the Manx "ls" program). Includes source.

Fd A modified version of "eless" that processes an entire track at a time, to minimize rereading of blocks. Includes source.

HardCopy A neat little program that creates a hardcopy transcript of any CLI session (like the unix "script" program). Includes source.

MouseOff Enhanced and smaller version of MouseOff released on disk number 73. MouseOff will cause the mouse point to disappear and then reappear if mouse movement is detected. Includes source.

SetFont Program to change the font used by a workbench screen. V 2.0, source included.

SpeedDir Another faster directory lister type program. This one uses the standard dir utility format for displaying directories. Written in assembler, includes source.

DISK 76 language
This is disk 1 of 2 of Chris Gray's Draco distribution for the Amiga.

DISK 77 language
This is disk 2 of 2 of Chris Gray's Draco distribution for the Amiga.

DISK 78

Cycles A simple but enjoyable game apparently inspired by the cycle game in the movie "Tron". Version 1.0, binary only.

EOMS Experts Only Mercenary Simulator. A neat (and tough!) PD game originally developed for eventual commercial release but the author decided to release as PD instead. So far my son has beat every other Amiga game I've got, both PD and commercial, but he gave up on this one. For serious game players. Binary only.

MandelVroom New Mandelbrot picture generator with some neat features, including use of contour map making techniques that allow you direct control over coloration and recoloration in seconds, selectable fixed point or floating point computations, contour palette, etc.

DISK 79

AsmTools Some CLI type tools, written in assembler (echo, loadit, mounted, setiace, why). Includes source.

AssignDev Assigns multiple names to a given device. For example, allows the names "df0:" and "df3:" to refer to the same physical device. Includes source.

AuxHandler Example of a dos handler that allows use of a CLI via the serial port. Includes source.

Cmd Cmd redirects the serial.device or parallel.device output to a file. Useful for capturing print jobs for debugging or "offline" printing. Includes source.

Info Replacement for the AmigaDOS info command. Includes source.

Kill Removes a task and as much of its resources as possible. Can close windows, unload process code, etc. Includes source.

M2Error Can be used to display compile errors produced by the TDI Modula2 compiler, like the m2error supplied by TDI. Includes source.

MonProc An enhanced version of the process packet monitoring program from disk 69. Includes source.

Mounted A little program to run from CLI scripts to find out if a disk is mounted or not. Includes source.

Nro Another roff style text formatter. Includes source.

ParTask Example program for finding the parent task of your current task. Includes source.

QueryAny Simple program for use in CLI scripts to query for yes/no decisions. Includes assembler source.

ScnSizer Sets the preferences data for increasing the windowbounds, and takes effect immediately. Includes source.

SharedLib Working example of how to build a shared library. Includes source.

Task Simple example of how to use CreateTask. Includes source.

Uw Unix Windows client for the Amiga. Version 1.00, includes source.

Who Lists tasks on the ready and wait queues. Includes source.

DISK 80

AmiGazer Compute a view of the night sky, using a database of 1573 stars, for any date, time of day, and latitude. Click on stars for info about them. Binary only.

CardFile Study aid card file program written in AmigaBasic. Useful for organizing small blocks of data, such as can be done with a 3X5 card file system. Binary only.

Conman Extremely useful replacement for the standard console handler, that provides line editing and command line histories completely transparent to any application program that uses CON: windows.

IMandelVroom A slightly modified version of Kevin Clague's mandelbrot program (on disk number 78) that uses his "ring detector" to draw an approximation of the interior strange attractor contours.

NewDemos Some new demos, including replacemens for the standard "lines" and "boxes" demos, that use only a few percent of the CPU time, so it is reasonable to have lots of them running simultaneously to demo multitasking.

Othello Othello game, binary only.

PrinText Program to display ASCII text files on the screen with scrollbar, arrow gadgets, automatic wordwrap, a search function, speech, IFF picture loading, and online help.

PrtDrvGen Program to automatically generate custom printer drivers. Version 2.2b, binary only, source available from author.

RainBench Simple program which cycles the hardware color register to get an interesting effect on your workbench screen. Binary only.

ShortCut A utility that collects keystroke sequences and allows you to replace them with a single key stroke. Binary only. Author:

ShowPrint A full feature IFF picture file screen dump utility. Can display and print all sizes of pictures including those larger than the screen. Many options. Binary only.

Sizzlers A series of graphics demo programs. Version 1.7.0, binary only.

Timer Creates a small window containing a timer. Version 1.5, binary only.

Tools Some miscellaneous tools, including a memory editor, memory disassembler, ascii chart, and calculator. Binary only.

DISK 81

Asm68k Full featured macro assembler, version 1.1.0, binary only. Well documented.

Autofacc Automatically shrinks the ASDG F ACC window and moves it to the back Also allows the number of buffers to be increased or decreased. Most useful from the StartupSequence file while booting. Binary only.

Brushes Contains 53 custom brushes for use in DPaint while drawing schematics. Includes things like resistors, capacitors, gates transistors, IC pacs, etc.

CheckIFF Program to check the structure of IFF files and report any problems. Binary only.

Cled A simple command line editor which allows you to edit your commands before and after they are processed. Uses the arrow keys and simple control sequence keystrokes for cursor positioning and editing tasks.

Conman Extremely useful replacement for the standard console handler, that provides line editing and command line histories completely transparent to any application program that uses CON: windows. Shareware. Version 0.99B, binary only.

Fonts Several miscellaneous new fonts.

Icon Version 6.0 of the public domain implementation of Icon. Binary only.

KeyLock Freezes the keyboard and mouse until the correct password is typed. Protection against inquisitive kids, cats, and other lifeforms. Binary only.

Scat Another display hack, created from "fng" display hack. Binary only.

Smush Another display hack, feed it an iff file and see what happens. Binary only.

Target A little program which takes over the mouse pointer and turns it into a gunsight. Pressing the mouse button flashes the pointer and gives a gunshot. Version 1.23, binary only.

DISK 82

Adventure A port of the classic Adventure game originally written by Will Crowther and Don Woods. Has been extended to a 550 point version. Also speaks as it prints.

AmicTerm A new terminal/communications program based on Dan James' "comm" program, but greatly enhanced. Includes a script language, auto redialing, choice of display beep or audible beep, enhanced file requester, and more. Version .50 (beta), binary only.

D2DDemo Demo version of Disk2Disk from Central Coast Software. Binary only.

DXSynth Voice filer program for Yamaha DX series synthesizers. Update to "VoiceFiler" released on disk 38. Binary only.

DiskMan Another "disk browser and/or dirutil" type program. Version 1.0, binary only.

Icons Miscellaneous new disk, directory, and file icons, including John Olsen's great "fish-disk" icon. Binary only.

Pant A universal midi patch panel that allows midi parameter info to be sent from the Amiga to any midi device that can accept param info. Version 1.2, binary only.

Rocket Another interesting Workbench display hack. This one is really a game in disguise. Binary only.

Sand This program has "magnetic grains of sand" that follow the pointer wherever it goes. Cute. Binary only.

DISK 83
This disk contains a demo version of TeX.

DISK 84

AudioTools Demo programs on accessing

the audio device. Includes source.
BlitLab Lets you experiment with the blitter, to your heart's content, in relative safety.
Ed An editor based on the editor described in the original Software Tools book. It is very similar to the Unix "ed" editor, but not identical. Includes source.
GravityWars The object of this game is for one player to hit the other player's ship with a missile, before being hit yourself. The ships and planets don't move, but the presence of gravity fields and black holes makes hitting your target difficult. V.1.04, shareware. Update to the version on disk 70, includes source in Modula2.
HunkPad Two programs to reduce problems with padding added by xmodem transmission.
PipeHandler An AmigaDOS pipe device which supports OPEN, CLOSE, READ, WRITE, LOCK, EXAMINE, and EXNEXT. Thus you can have "named pipes". It also supports "taps" on a pipe. Version 1.2, includes source.
PopCLI Provides a simple way of starting another CLI at any time without having to load workbench or exit program. Also has a builtin screen saver mode Version III, an update to the version on disk 40. Includes source.
Requester A file name requester that looks like the one used in *Deluxe Paint*, and a sample program for using the requester.
ScottDevice A mountable MicroForge SCSI driver. Supports one SCSI buss device with two hard disk units attached to it. Version 33.1, includes source.
Viacom Another amusing little hack. Sort of a political statement regarding the quality of service of a San Francisco area cable TV service.

DISK 85
Csh Version 2.06 of Matt Dillon's csh like shell, modified for Manx C. Includes source.
7FileReq Another file requester, but this one also has a fast pattern matching capability. Includes source.
Hide A small utility to allow you to run old or ill-written applications on systems with expansion ram. Binary only.
ImageTools A set of shareware tools to do various manipulations on IFF images, including comparison of the color palettes of a pair of IFF images, filtering an IFF image in various ways, producing a color usage frequency chart for an IFF image, reducing the size of an IFF image to produce a miniature to use as an icon, converting an icon to an IFF image, and recoloring an IFF image using the palette of a second image, in a least squared error fashion.
LowMem A low memory server, which is a compact shared library which allows arbitrary processes to register their desire to be notified of impending memory shortages. This allows good citizen programs to free up memory that they may not need, so other programs can use it. Binary only.
Plot6 A star plotting program. Short on documentation and user friendliness, but interesting nevertheless. Also includes source.
RawIO Example of how to set your standard input to what is commonly known as "raw" and/or "CBRE AK" mode on Unix systems. Includes source.
Rocket Another interesting Workbench display hack. This one is really a game in disguise. It is the same as the one on disk 82, but also includes source.
VMore A shareware program that is a "more" like text file viewing utility that can be run on multiple files from either the WorkBench or the CLI. Version 1.00, includes source.
Vnews A simple news file reader, that will read all the news files in a specified directory, optionally starting with a specified file. Includes source.

DISK 86
AutoPoint Autopoint serves two functions: it automatically selects the window underneath the mouse pointer and it provides a very nice screen saver facility. Binary only.
ClickToFront Extends the user interface so that a doubleclick into a window brings it to the front.
Cmd Cmd redirects the serial.device or parallel.device output to a file. Useful for capturing print jobs for debugging or "offline" printing. Version 3, includes source.
FileIISGDemo Demo of *Softwood File* IIsg, a database manager with sound and graphics.

DISK 87
AdvSys An adventure writing system. Advsys is a special purpose programming language that was specifically designed to be used to write computer text adventure games. Version 1.2, binary only.
AutoIconOpen Example code to fool WorkBench into thinking it is receiving mouse inputs that select and open icons. Version 1.2, an update to the version on disk 73. Includes source.
Claz Converts IFF picture files to POST-SCRIPT. Works with Amiga HAM pictures, as well as "normal" pictures. Also includes scaling. Version 2.0, includes source.
Commodities Commodities Exchange, an Amiga exec library which can be opened and used by application programs to gain access to input in a very flexible way.
Diff A simple version of diff. Update to version on disk number 75, includes source.
Dme V.1.27. Ssimple WYSIWYG editor designed for programmers. It is not a WYSIWYG word processor in the traditional sense. Update to version on disk number 74. Binary only.
DropShadow A program that makes your WorkBench windows have dropshadows. This is version 2.0, the same as on disk number 74, but also includes source.
Elib Example of building a shared library using small model Manx C. Includes source.
IDHandler An AmigaDOS device handler, that generates unique identifiers. Generates a new unique 16 digit decimal number each time it is opened by an application. Version 1.0, includes source.
Install Two possible replacement versions of the standard install program (to make a disk bootable). Includes source.
MemWatch Intended to sit in the background and watch for random trashing of low memory by an application under development. If it detects a write to low memory, it repairs it to what used to be there, then puts up a requester indicating what damage had been done. Very useful! Version II, includes source.
MovePointer Moves the pointer to any specified location on the screen, specified by XY coordinates. Includes source.
MoveWindow Move a named window to any arbitrary XY coordinate and possibly resize it at the same time. Includes source.
MunchingSq "Munching Squares" hack, now upgraded to take a single argument for a seed value. Includes source.
PalTest Example code of how to determine dynamically whether or not you are running on a PAL machine. Includes source.
Sc Program which demonstrates generation of good looking pseudo-random scenery. Includes source in C(translated from Draco version on disk 61).
Tek4695 A Tek4695 printer driver. Binary only.
WBDualPF An example of using a dual playfield screen, using a method contrary to documentation in the Intuition Manual. Fixed version of copy released on disk 41. Includes source.
WarpText Fast text rendering routines, to be linked with application programs. Includes source.
Yaiffr Yet Another IFF Reader. Handles HAM, HIRES, and overscan, includes source.
Zoo A file archiver, much like "arc" in concept, but different in implementation and user interface details. Includes some nice features that "arc" lacks. Version 1.42 A, binary only.

DISK 88
DirMaster A very nicely done shareware disk cataloger. Includes sample database of some disk libraries. Version 1.0a, binary only.
FuncKey A shareware function key editor. Version 1.01, binary only (source from author).
MFFDemo Demo copy of the MicroFiche Filer program from Software Visions Inc. Fullpowered database program for manipulation of text, numbers, and pictures. It uses the microfiche metaphor for dealing with your data graphically. This is a full production version except that the save option has been disabled. Includes a sample database of my disk library. Binary only.
ScreenShift A small program that allows you to adjust the position of the screen on your display, just like the preferences function. Works from CLI or WorkBench. Includes source.
Snake A variant on the old "bouncing lines" program, this one uses multiple vertices and Bezier splines. Includes source.
Snap Takes a picture of the current front screen and reduces it to produce an icon. Can produce icons of a user specified size. Binary only.

DISK 91
This disk contains a distribution of **ADL (Adventure Definition Language)**. ADL is a superset of an older language named DDL. ADL enhancements were made by Ross Cunniff, who submitted this material for inclusion in the library. The disk is essentially unchanged except that: (1) Many icon files have been added to help workbench only users get at least some information about this disk and about ADL (which is only usable from the CLI environment). (2) The disk name has been changed to AmigaLib-Disk 91. (3) The standard library files "GeneralInfo", "Contents", and "Distribution", along with their associated icons, have been added to the disk. (4) The directory 'c' has been added, along with a very nice text reader program called "less", which is the default tool for reading all the text files for whichthere are icons. Included here are the sources to the ADL compiler, interpreter, and debugger. Currently ADL is a CLI environment program only, but that he hopes to offer a more Amiga'ized version in the future. The stack size should be set to at least 10000 before attempting to run ADL.

DISK 92
As6502 Contains a portable 6502 assembler, including source in C.
Bawk Text processor inspired by the Unix awk utility. This is an update to the copy released on disk 65. Includes source in C.
HunkPad Pads an object file out to where it is exactly a multiple of 128 bytes, thus making it immune to having garbage appended on to the end of it by xmodem type file transfer protocols. Version 2, includes source. Update to version released on disk 84.
Less Like Unix "more", only better, with forward and backward scrolling, searching and positioning by percent of file and line number, etc. Very useful! This is Amiga version 1.2, an update to the version on disk 74. Includes source.
Ndir Library that implements the 4BSD uni directory access routines (opendir, closedir, readdir, etc). Includes source in C.
Parse A recursive descent expression parser that parses expressions, computes the expression value, and prints shit. Includes source in C.
Shar Two programs to pack and unpack shell archives on theAmiga. Shell archives are the traditional Usenet method of bundling multiple text files for posting as a unit or for sending via electronic mail. Includes source in C.
SmallLib A replacement for amiga.lib that is about 8 times smaller. Binary only.
UUencode Programs to encode/decode binary files for transmittal via mail or other text only methods. Update to version on disk 53, includes a simple linebyline checksum technique that can read and write files compatible with the older uuencode/uudecode, plus a file size test modification transparent to older uudecodes.

DISK 93
Dme V.1.27. Simple WYSIWYG editor designed for programmers. Update to version on disk 87 (which was binary only). Includes source.
MicroEmacs Version 3.8i. Update to the version released on disk 61. Includes source.

DISK 94
AudioTools Demo programs on accessing the audio device. This is version 2, an update to the release on disk 84. Includes source.
ClickUpFront Another program, similar in function to the ClickToFront program from disk 86, that allows you to bring any window to the front simply by doubleclicking in any part of it. Version 1.0, includes source.
HeliosMouse Another "sunmouse" type program. Automatically activates a window simply by moving the mouse pointer into the window. Version 1.0, includes source.
Iff2Ps A program to convert any IFF file to postscript for printing or viewing on a postscript compatible device. Version 1.2, binary only.
ModulaTools Various useful routines for those programming in Modula. Binary only.
Terrain3d Program which demonstrates generation of good looking pseudorandom scenery. This version is a derivative of "sc" distributed on disk 87, but now displays terrain in 3d relief. Includes source.

DISK 95
Cmd Redirects the serial.device or parallel.device output to a file. Useful for capturing print jobs for debugging or "offline" printing. Version 4, includes source.
CygnusEdDemo Demo version of CygnusEd, an editor from CygnusSoft Software. CygnusEd supports simultaneous editing of a multiple files, multiple views of the samefile, very fast display, margins, wordwrap, statuslines, insert/overstrike mode, online help, and more. Includes demo 3.0 version of MandFXP. Binary only.
Gomf Gomf stands for "Get Outa My Face", a phrase many a programmer has mumbled when a Guru alert appears unexpectedly. This interesting little program can generally make the Guru go away and allow you to clean up and shutdown more cleanly. V1.0, binary only.
Journal Records a sequence of mouse and keyboard events as they occur and stores them in a file. The file can be played back with another program, also supplied, which causes the same sequence of events to occur again. Very useful for creating demonstrations of programs or documenting repeatable bugs. V1.0, binary only.
MergeMem Program which attempts to merge the MemList entries of sequentially configured ram boards. Version 2, an update to the version released on disk 56. Includes source.
PrinterStealer A program similar in function to "Cmd" that allows diversion of output destined for the printer to a file for future output or debugging purposes. Binary only, source available from authors.
RecordReplay A program, similar in function to "Journal", that records and plays back mouse and keyboard events. Binary only, source available from authors.

DISK 96
AnimPlayer An animation reader and displayer that is the result of a consortium of animation software developers,which includes the authors of *Videoscape*, *Sculpt3D*, *Silver*, *FormsInFlight*, and *Animator Apprentice*. Includes source.
Chess A port of a chess game posted to Usenet. Still uses a "curses" type interface, so needs to be Amiga'ized. V.1.0, includes source.
HackBench Provides the source for a WorkBenchlike program, for experimentation and validation of new interface ideas. It is not intended to be an actual WorkBench replacement.
Label Simple program to print labels with arbi-

trary text. Version 1.3, binary only, but source available from author.
LineDrawer Makes a line drawing based on drawing commands stored in a text file. Version 1.0, includes source.
PopUpMenu Example code implementing pop-up menus that are reasonably compatible with Intuition menus. Includes source.
Tek4695 A Tektronix 4695/4696 printer driver. Includes source.
TimeRam A program to test the access speeds of Fast and Chip ram. Binary only.
WarpText Fast text rendering routines, to be linked with application programs. Update to the version released on disk 87. Version 2.0, includes source.

DISK 97
CutAndPaste Public domain implementations of the Unix cut and paste commands. Includes source.
GraphIt A program to plot most simple functions in 2 or 3 dimensions, as well as 2d parametric equations in term of t. Includes source.
Juggler Stunning animation of a robot juggler with ray traced reflective spheres. Uses HAM mode display and sound effects to boot! This is version 1.2. Binary only
MouseReader Shareware program, submitted by the author, to read text files and view iff files using only the mouse. Binary only.
Shm A simple graphics demo which approximately simulates the motion of two interacting pendulums. Includes source.
Splines Program to demonstrate various curve fitting and rendering techniques. Includes pop-up menus. Includes source.

DISK 98
Access A 16 colour terminal program based on Comm version 1.34. Includes new macro window, custom gadgets, colorized menus, etc. Version Beta 0.18, binary only.
Backup A simple backup program that writes normal AmigaDOS disks as the backup destination. To recover files, you just copy from the backup disk. Includes source.
DCDemo A demo version of DiskCat 2.3, a disk-catalog program. Demo is limited to cataloging 100 files at a time. Binary only.
HdDriver A complete driver for a WD100205 hard disk controller card. Includes source.
QBase A "MailBase Management utility", that lets you define and maintain records of your family, friends, and other associates. Currently a maximum of 200 records per file. Binary only.
Thai A simple Thai quiz program developed by the author while he was learning the Thai language. Includes source.

DISK 99
ARender Version .3
A Ray Tracing Construction Set For The Amiga Computer

DISK 100
Berserk This animation is a "must see" for every Amiga user, and ranks up there with "Juggler" as a premier demo for the Amiga.
Conman Extremely useful replacement for the standard console handler, that provides line editing and command line histories completely transparent to any application program that uses CON: windows. Shareware. Version 1.0, binary only.
WBLander Another interesting Workbench display hack. This one is really a game in disguise. Previously released on disk number 85 as "Rocket", this one has been upgraded to have sound effects. Binary only.

DISK 101
CirPlane A circular plane generator for VideoScape 3D. Generates a clockwise circular polygon with the specified number of vertices. Version 1.0, includes source.
Icon Assembler Loads existing WorkBench icon files and allows you to change either the primary or alternate images to another image loaded from an IFFbrush file. Binary only.
MicroSPELL Standalone spelling checker which scans text files and reports on misspelled words. 1000 word "common word" list, a 43,000 word main dictionary, and supports multiple user dictionaries. V.1.0, includes source.
Midi A midi library and utilities set. This looks like a very complete package. Includes a midi monitor, a routing utility, a midi library status utility, and more. Also includes source.
PsIntrp A postscript interpreter that reads postscript files and previews them on an Amiga screen. Interactive input and output takes place in a small window. Can also take input from a file. Includes source in assembler.
StartUps Three replacements for the standard C startup files, Astartup.obj and LStartup.obj. The options include (1) BothStartup.obj, for WorkBench programs or CLI programs with or without command line parameters, (2) WBStartup.obj, for WorkBench programs or CLI programs that require no command line parameters, and (3) CLIStartup.obj, for CLI programs that require command line parameters but do not need to be able to be runnable from WorkBench. Includes source.

DISK 102
Dbug Machine independent macro based C debugging package. Update to the version released on disk 41, now includes a machine independent profiling mechanism. Includes source.
Match stuff Heavy duty text pattern matching stuff. The pattern syntax is an extension of standard AmigaDOS filename matching. Includes source.
Sectorama Designed to help Amiga users recover lost or damaged data from floppy or hard drives, or to repair a damaged volume. Binary only.
SiliCon A smart input line interpreter that provides a separate command window with full editing and recall of previous commands. Update to the version on disk 50. Binary only.
Xicon Xicon lets you use icons to call up scripts contalning CLI commands. This is version 2.00, an update to the version on disk 31, and includes close gadgets, window size specification, text display capability, plus more. (Similar to ICONX in WB1.3 - Ed) Binary only. :

DISK 103
AviTrees Library and test program that implement routines for creating and using balanced binary trees (AVL trees) held entirely in memory. Includes source.
Calc A programmable calculator program with similarities to a handheld RPN calculator. Version 1.0, shareware, binary only.
Cref A C cross referencer program. Includes source.
DosKwik A pair of programs which allow you to save files, or a group of files, to one or more floppies for quick loading (loading up a ram disk for example). Binary only, shareware.
IntuiDOS A program to give improved control over, and handling of, the material on all diskettes in the 'CLIaree' by employing a multidisk, scrollable directory and using Intuition techniques to issue DOS commands. Written in assembler. Binary only.
MFFUpdate A text import utility for MicroFiche Filer (demo version released on disk 89) and updates to some PD disk library databases. Binary only.
PackIt Will take all the files and directories on a disk and pack them into a single file for electronic transmission via modem. Binary only, shareware.
Sol Amiga version of solitaire game posted to usenet sometime ago and modified to use Amiga console control codes in place of curses calls. Includes source.

DISK 104
This disk contains a copy of Glenn Everhart's large and powerful spreadsheet program called **AnalytiCalc**, submitted to me directly by Glenn for inclusion in the library. The remainder of this file is Glenn's "Abstract.txt" file that describes AnalytiCalc. Source and documentation is included on the disk in arc'd form because it otherwise would not all fit on the disk.

DISK 105
AsmProgs Some misc assembly tools, programs, etc. "AsmFilter" (actually in AmigaBASIC) turns the output of the Metacomco disassembler into a file that can be reassembled. "AddKickMem" adds the KickStart memory to your free memory on an Amiga 1000 with Kickstart in ROM. "Clear" fills unused areas of memory with a specific bytepattern. "L" is a replacement for the BCPL "list" program, but with some graphics enhancements. "SharpFont" is an 8 pixel nonproportional font. "Stack" is a replacement for the BCPL stack program. Includes some source.
BasicProgs Some more AmigaBASIC programs. LeastSquare solves least squares problems and graphs the results. Curves is a demo of one use for LeastSquare(find curves to fit a set of points). Freud is a Freudian analysis program. Includes source, needs AmigaBASIC from Extras.
Bison A replacement for unix "yacc" command. Update to the version on disk 51, with some more bug fixes. Includes source.
DrunkenMouse Another cute program in the tradition of "display hacks". Includes source.
FlamKey Installs a little key on the WorkBench screen title bar, and then waits in background until somebody clicks on the key. When activated, allows the keyboard and mouse inputs to be locked out until a password is entered. Shareware, binary only.
GravityWars Object ol game is for one player to hit the other player's ship with a missile, before being hit yourself. Version 2.0, shareware, binary only. Update to version on disk 84.
IPo2C A utility to write a C language definition of the current Intuition pointer to a file, which can then be used in a program via SetPointer to mimic the intuition pointer. Includes source.
Pere-et-Fils Example of creating and using reentrant processes. Includes source.
RecordReplay A program that records a sequence of mouse and keyboard events as they occur and stores them in a file. Version 2.0, an update to the version on disk 95. Shareware, binary only.

DISK 106
FuncKey A shareware function key editor. Version 1.1, an update to the version on disk 89. Binary only (source available from author).
MoreArt A small selection of some additional Amiga artwork submitted to me since the last "art" disk.
QuickFlix An IFF slideshow and cel animation program that takes full advantage of the Amiga's multitasking operating system, supports all the graphics modes, can run with internal timing or be triggered by an external source, caches images in memory to achieve rapidframe rate, etc. Version 0.13, binary only, shareware.
RistiNolla A Finnish game. The name means something like CrossZero, and is also called GoMoku. Version 1.0, shareware, binary only.

DISK 107
Csh Version 2.07 of Matt Dillon's csh like shell, modified for Manx C.
Diff A file comparison utility, similar to other common "diff" programs. Includes source.
ProSuite This is the Amiga Programmers Suite Book 1.01. The suite provides example code of facilities that every programmer needs (such as FileIO Requester), examples of new facilities (such as XText and DoRequest), and a tutorial on how to program the Amiga. Includes source.
SVTools Some useful tools. Includes a new version of Vnews, sit, setstack, retool, memlist, fragit, and yoyo. Includes source.

DISK 108
AList A directory listing program based on Dave Haynie's LD4 program, with extensions and enhancements. Includes source.
DirMaster A very nicely done shareware disk cataloger, submitted by the author for inclusion in the library. This is version 1.0b, an update to the version released on disk 89. Binary only.
DotsPerfect Printer driver for an Epson MX80 printer with the DotsPerfect upgrade kit installed. Includes source.
MonIDCMP Lets you monitor the IntuiMessages that pass through an IDCMP window. Great for debugging applications and for snooping around in the inner workings of other programs. Includes source.
PrintPop A utility to enable the user to send some common control settings to the PRT: printer device. When installed, a leftamiga F1 sequence will pop up a small window with various options. Includes source.
Sectorama Designed to help Amiga users recover lost or damaged data from floppy or hard drives, or to repair a damaged volume. V.1.1, an update to version on disk 102. Binary only.
Tek An enhanced version of Dave Wecker's vt100 (v2.6) which includes emulation for a Tektronix 4010/4014 graphics terminal. This is a much improved version of the Tek4010 program from disk number 52. Includes source.
Zoo A file archiver, much like "arc" in concept, but different in implementation and user interface details. Includes some nice features that "arc" lacks (such as file/path names up to 255 characters in length). Version 1.42B, an update to the version released on disk 87. Binary only.

DISK 109
Machine A neat new animation.
SimCPM A CP/M simulator for the Amiga. Simulates an 8080 along with H19 terminal emulation. Includes source.
UUpc Version 1.0 of a suite of programs that will allow you to hook up your Amiga as a usenet node. Includes source.

DISK 110
A68k A 68000 assembler originally written in Modula2 and converted to C. Has been converted to accept metacomcocompatible assembler source code and to generate Amiga objects. Includes source.
Pdc An optimizing C compiler for the 68000 processor. Update to the version first released on disk 53, though apparently not based on the code from that disk. Major porting work was done to get it to the point where it would compile and execute simple programs on the Amiga. This version now generates metacomco compatible assembler source code, which can be assembled by the assembler also provided on this disk and then linked by the freely redistributable linker "blink" (also provided). Includes all compiler source and some library and startup source code. Requires amiga.lib from developers kit to generate complete running example executables.

DISK 111
AmyLoad A graphical monitor of cpu, blitter, and memory use. Includes two components; load.device, which monitors system parameters, and amyload, which is the user interface and display program. Includes source.
AssignDev Assigns multiple names to a given device. A modified version of the original on disk number 79. Includes source.
Gauge Continuously displays memory usage in a vertical bar graph, similar to the workbench "fuel gauge" type display for disk space. Binary only.
HeliosMouse Another "sunmouse" type program. Automatically activates a window simply by moving the mouse pointer into the window. Version 1.1, an update to the version on disk 94. Includes source.
Labels Alphabetic and numeric ordered cross reference lists of defined system constants.

Recommended for debugging purposes only, use the symbolic values in programs!
Mandel Another mandelbrot generator program. Includes source.
PopLife A PopCLI type thingie that instead plays life all over your screen. Includes source.

DISK 112
BeachBirds Entry to the Badge Killer Demo Contest. Uses sprites and sound to portray a beach scene. 512K machine. Binary only.
Bully Badge Killer Demo Contest entry. Pushes all open screens around (thus the name "bully"). Designed for showing off more than one demo at a time. Includes source.
DropShadow Dropshadow version 2, rev 0, for use with Wavebench demo. Binary only.
HagenDemos Badge Killer Demo contest entries, "RGB" and "Focus". RGB was the overall winner of the contest. One meg Amiga to run. Binary only.
Viacom Latest version of viacom for use in conjunction with the WaveBench demo. Binary only.
WaveBench Demo Contest entry. It is a neat screen hack, and runs on 512K machines. For more laughs, try in conjunction with Viacom or Ds (Dropshadow). Includes source.

DISK 113
AmiCron A simple Unix "cron" type program, which is a background task that uses a diskresident table to automatically run certain tasks on a regular basis, at specific times. Version 2.3, includes source.
Dme Simple WYSIWYG editor designed for programmers. Version 1.28f, update to that on disk number 93, includes source.
DosDev Example DOS device driver in Manx C. Version 1.10, includes source.
M2 Amiga Demo version of the final product M2 Amiga. A fast single pass Modula2 compiler with editor, linker, a small set of interface and standard libraries. Further development of the ETHZ compiler on Disk 24. Binary only. Demos with source.
NoIconPos This program clears the position info of any of your icons to allow WorkBench to pick a reasonable place for the icon again. Written in Modula2, another demo for M2 Amiga, showing the simplicity of programming with this Modula2 compiler.

DISK 114
CDecl English to C (and vice versa) translator for C declarations. This little gem will translate English such as "declare foo as pointer to function returning pointer to array 10 of pointer to long" into "long *(*(*foo)())[10]", and vice versa. An absolute must for anyone except possibly the most hardcore C guru. Includes source.
Vt100 Version 2.7 of vt100 terminal emulator with kermit and xmodem file transfer. Includes a few bug fixes. Update to the version released on disk 55. Includes source.
WBLander This entry from the Demo Contest is a special version of the WBLander program from disk 100. The ending is unique. Also uses sound effectively. Includes source.

DISK 115
Killer An incredible demo written by Robert Wilt. It won fourth place in the Badge Killer Demo Contest. Requires at least one meg of memory to run. Sound is also an important part of the demo so turn it up. Binary only.
Marketroid Demo Contest entry. It is another devious sprite oriented demo with lots of "in" jokes. 512K machine. Includes source.

DISK 116
Movies A RAM animation system with three different example animations; Kahnankas, Rocker, and F15. Both Kahnankas and Rocker run on a 512K and show off overscan HAM mode. Includes animation player program (movie), animation builder programs(dilbm, pilbm), and a text/graphics display program(vilbm).

DISK 117
AMUC Demo A really neat horizontal scrolling demo. Binary only.
ExP Demo Demo version of Express Paint 1.1. This is the program that was used to create the huge scrolling demo picture in the AMUC Demo drawer on this same disk. Binary only.

DISK 118
Empire A complete rewrite, from the ground up, in Draco, of Peter Langston's Empire game. Empire is a multiplayer game of exploration, economics, war, etc, which can last a couple of months. Can be played either on the local keyboard or remotely through a modem. V.1.0, shareware, and includes source code.
HAMmmm Demo Contest entry. HAMmmm displays lines whose end points are bouncing around the screen, which is a double buffered HAM screen. Includes source in JForth.
Stars Demo Contest entry. Based on original code by Leo Schwab, has credits longer than the actual demo. 512K Amiga. Binary only.
WireDemo Demo Contest entry. Demonstrates the Amiga's line drawing speed. Runs on a 512K Amiga. Includes source.

DISK 119
MicroEMACS Version 3.9e. Update to the version released on disk 93. Also included, for the first time, is extensive documentation in machine readable form. Includes source.

DISK 120
Amoeba This clone of Space Invaders is one of the best freely redistributable games for the Amiga to date. Highly recommended! Binary only.
BackGammon A graphical Backgammon game done as an undergraduate A.I. course project. Version 1.0, includes source.
Bankn A complete checkbook system offered by the author as shareware. V.1.3, binary only.
EgyptianRun Cute little "road race + hazards" type game. Version 1.1, binary only, shareware, source available from author.
IconImage Program to replace an old icon image with a new image, without affecting icontype, drawer data, etc. Includes source.

DISK 121
BasicStrip An AmigaBASIC program that helps to convert programs written in other forms of Basic to AmigaBASIC. Author: George Trepal
DataPlot A shareware plotting program written in AmigaBASIC. Also includes a least squares curve fit program.
Plot A shareware 3D graphing program written in AmigaBASIC, with some sample output plots. Source available from author.
Stairs This AmigaBASIC program demonstrates a musical illusion based upon perceptual circularity of widely spaced tones whose volumes are defined as a sinusoidal relationship to their frequency.
Uedit Version 2.3 of this nice shareware editor. Has learn mode, a command language, menu customization, and other user configurability and customizability features. Binary only, shareware, update to version on disk 60.
WBColors A simple little program to change the Workbench colors to a predetermined color set, for programs that expect to be booted off their distribution disk but instead are run from a hard disk. Includes source.

DISK 122
Asteriods Nicely done "blast the asteroids" type game. Unique feature is that all the images and sounds are replaceable by the end user. So instead of ships and rocks, you can have an Amiga against a horde of IBMPC's if you wish.
Iff2Pcs An interactive puzzle program that takes any IFF file containing up to 16 colors, and breaks it up into squares to make a puzzle which the user can then piece back together again. Version 1.0, includes source.
Names A shareware program to create and manage mailing lists. Binary only.
Pr A little utility to print listings indifferent formats. Similar to the Unix "pr" program. Includes source.
PushOver A neat little board strategy game, in AmigaBASIC. Includes source.
PuzzlePro Create a puzzle from an IFF picture, which the user can then piece back together again. Written in AmigaBASIC. Version 1.0, binary only, shareware, source from author.

DISK 123
Arp ARP stands for "AmigaDOS Replacement Project". Arp is an effort led by Charlie Heath of Microsmiths Inc., to replace the current DOS in a compatible fashion, so that current programs will continue to work. Arp also makes whatever improvements are possible, so that current and future programs will work better.
Car Demo Contest entry. It apparently is an inside joke relating to a well known Amigan's experience with a certain highend graphics hardware manufacturer.

DISK 124
Icons Some sample animated icons.
Tarot An AmigaBASIC program written by the author as an exercise for learning BASIC. Some nice graphic renditions of tarot cards.

DISK 125
ElGato This animation is an entry to the Badge Killer Demo Contest. It also has a background music arrangement, that requires Sonix to use.

DISK 126
Colour A program to manipulate the colors of specific namedscreens, saving their current color sets to data files, loading new color sets from data files, or interactively changing the colors. Includes source.
Dance These two programs, "dancing polygons", are an entry to the Demo Contest. They demonstrate the range of colors available on the Amiga. Includes source.
HBHill Demo Contest entry, the first known animation that makes use of the Amiga's "Extra Half Brite" mode.
Iconify A subroutine that creates an icon on the Amiga screen that can be subsequently dragged around, and doubleclicked on. Includes source and demo program.
Only Amiga Demo Contest entry. It consists of tree balls being juggled by pyramids rotating on their tops.
Suplib The support library needed to rebuild various programs from the source, including DME, DTERM, etc. Includes source.
VCheck Version 1.2 of the virus detection program from Commodore Amiga. This version will test for the presence of a virus in memory, or on specific disks. Binary only.

DISK 127
Bounce Demo Contest entry. It creates little dots that bounce around and multiply. Includes source.
Nemesis Demo Contest entry. It is quite small for what it does, and won fifth place in the contest. Binary only.
Ripples Demo Contest entry. Unlike most other animations, it shows a fixed object from a moving point of view, rather than a moving object from a fixed point of view.

DISK 128
Dis A 68000 disassembler, written in 68000 assembler. Includes source.
DropCloth Lets you place a pattern, a 2 bitplane IFF image or a combination of a pattern and image, into the WorkBench backdrop. Version 2.2, shareware, binary only.
LedClock An extremely simple clock program, for interlaced screens only. Includes source.
MRBackUp A hard disk backup utility, that does a file by file copy to standard AmigaDOS floppy disks. Includes an intuition interface and file compression. Version 1.3, includes source.
Paint A simple screen painting program, written in web. Requires web preprocessing program to rebuild from source. Includes source in web.
PrtDriver A printer driver for the Toshiba "3 in one" printer in its Qume (best) mode. Includes source in C and assembler.
SDBackUp A hard disk backup utility. CLI interface only. Does file compression. Version 1.1, binary only.
Sed A clone of the Unix sed (Stream EDitor) program. Includes source.
wKeys A "hotkeys" program that binds keyboard function keys to window manipulation functions (window activation, front to back, moving screens, etc). Includes source.

DISK 129
DosKwik A pair of programs which allow you to save files, or a group of files, to one or more floppies for quick loading (eg loading up a ram disk). Version 2.0, update to version on disk 103. Binary only, shareware.
MRBackUp A hard disk backup utility, that does a file by file copy to standard AmigaDOS floppy disks. Includes an intuition interface and file compression. Versions 2.0 (with sources) and 2.1 (binary only, source available from author). Update to version on disk 128.
PaintJet An "official" Hewlett Packard PaintJet printer driver received directly from HP sources.
Patch Two independent ports of the very useful Unix utility "patch", which applies context diffs to text files to automatically update them. Includes source.

DISK 130
DirMaster A very nicely done shareware disk cataloger. This is version 1.1, an update to the version released on disk 108. Lots of neat new features and enhancements. Binary only.
Evo A human evolution toy/tutorial. Includes source.
Hp A nice RPN calculator program that supports calculations with binary, octal, decimal, hex, float, and complex numbers. Version 1.0, includes source.
Mach A "mouse accelerator" program that also includes hotkeys, the features of sun mouse, clicktofront, and popcli, a title bar clock with a bbs online charge accumulator, and more. Version 1.6a, includes source.
PatEdit A pattern editor for creating patterns to input to the Amiga Set AfPt macro call. Includes source.
QMan Mandelbrot generator written partially in assembly for speed. Includes source.

DISK 131
Dfc Copies disks like Maurader, but multitasks. Replaces both diskcopy and format but is smaller than either. It even has a nice little Intuition interface. Includes source.
HyperBase Nice little shareware database management system. Version 1.6, binary only, source available from authors. Update to version on disk number 58.
Life A new version of Life game, but with a new macro language for setting up patterns, some good examples etcf. Includes source.
Mackie A Popcli replacement that draws pretty lines on the screen in blanking mode. Includes source.
Mg1b A version of Mg1b with an ARexx port and other improvements. Finally you can define macros and bind them to function keys in your startup file! Includes source.
WFrags Another version of Frags, but this one pops up a nice little window that updates occasionally. Necessary for developers who wonder what their program is doing to memory, or why they can't load that program. Includes source.

DISK 132
Berserk This animation is a "must see" for every Amiga user, and ranks up there with "Juggler" as a premier demo for the Amiga. The difference between this distribution, and the one on disk 100, is that this one includes "source".

I.E. it contains all the object descriptions necessary to recreate the animation. Thus you can, if you like, try modifying various objects to create slightly different animations, or use it as an example for creating your own animations. Seldom does a disk get devoted to a single program, however animation is one of the Amiga's greatest strengths, and I felt it was appropriate to have at least one animation that was available at the "source code" level.

DISK 133

Conman Extremely useful replacement for the standard console handler, that provides line editing and command line histories completely transparent to any application program that uses CON: windows. Shareware. Version 1.1, binary only, update to version on disk 100. New features include additional editing keys, fast search keys, undo key, and more.

Crc Two programs that are very useful for generating 16bit CRC listings of the contents of disks, and verifying that a given disk's files still compute to the same CRC's as listed. Version 1.0, binary only.

CrcLists Complete CRC check files for disks 1128 of the library, using the Crc program also included on this disk. These were made directly from my master disks.

Overscan Patches the Intuition library so that sizable windows with MaxHeight of 200 (400 in interlace) and screens with Height of 200 (400 in interlace) will take advantage of the PAL overscan capability of Intuition V1.2. Includes source.

DISK 134

BoingThrows A 50 frame HAM animation done with Sculpt3D, and minor touchups with *DigiPaint*. The animation took about 325 hours of runtime to generate.

Browser A workbench tool, using text only windows, that makes all files in the system accessible for executing, copying, moving, renaming, deleting, etc. Version 1.2, binary only.

Dme Version 1.29. Dme is a simple WYSIWYG editor designed for programmers. Update to version on disk number 113, includes source.

Find Find is a utility which searches for files that satisfy a given boolean expression of attributes, starting from a root pathname and searching recursively down through the hierarchy of the file system. Version 1.0, includes source.

Library Demo version of a shareware program that stores textual information without regard to structure or content, and allows complicated searching for specific patterns. Written in assembler for speed, binary only.

SmartIcon This shareware program is an Intuition objects iconifier. Version 1.0 is limited to iconifying windows, which is still very handy. Binary only, source available from author.

DISK 135

TeXF A selection of 78 TeX fonts, with a conversion program to convert them to Amiga fonts. There are 22 different fonts at various sizes, ranging from 15 pixels high to more than 150 pixels. The conversion program can also be used with the fonts distributed with AmigaTeX, yielding an additional 1000 or so more fonts for use with other Amiga programs. Version 2.5, binary only.

DISK 136

AsmToolBox An assembler "toolbox" created to make interfacing between assembler programs and AmigaDOS easy. Includes source.

Bison A replacement for unix "yacc" command. This is a port of the latest GNU version with the goal of preserving all of bison's current features. Includes source and testing program "calc".

Iff2Pcs An interactive puzzle program that takes any IFF file containing up to 16 colors, and breaks it up into square to make a puzzle which the user can then piece back together again. Version 1.1, an update to the version on disk 122, includes source.

Paste A version of the Unix paste utility. Paste concatenates corresponding lines of the specified files into a single output line (horizontal or parallel merging) or concatenates them into alternate lines (vertical or serial merging). Includes source.

YaBoingII A game program demonstrating hardware sprite usage, including collision detection. This is an update to the version on disk 36. Includes source.

Zoo A file archiver, much like "arc" in concept, but different in implementation and user interface details. Includes some nice features that "arc" lacks. Version 1.71, an update to the version released on disk 108. Binary only.

DISK 137

Ct An Amiga program to display images from a CT scanner, along with several interesting sample images of scans of real people; including a skull, brain, heart, and spine. Binary only.

JeansIcons Miscellaneous cute icons created for AMUC's monthly newsletter disk.

Muncho A cute little program which plays a digitized sound sample when you insert or remove a disk from your drive. Binary only.

Sit An update to the Set Icon Type program from disk 107. Version 1.10, includes source.

VGad New gadget editor that takes two pictures of the window and its gadgets, one being the normal gadget state and the other being the fully selected state, and then merges the data and converts to C source code. V.1.0, binary only.

VirusX A boot sector virus check program that runs in the background and automatically checks all inserted disks for a nonstandard boot sector. Such disks can have their boot sector rewritten to remove the virus. Includes source.

ViLabel A program to print fancy customized disk labels. It will combine an IFF picture and up to 50 lines of text. It will also print labels from a batch file produced by SuperBase. Version 1.20, binary only.

DISK 138

AmigaLine A series of various technical notes for Amiga programmers.

Diff A program that uses the same algorithm as the Unix diff program and also produces context diffs, suitable for use with patch. Binary only.

Foreach A simple but useful program that expands a wild card file specification and then invokes the specified command once per expanded filename, with the expanded filename as the command argument. Includes source.

MacFont A conversion tool to convert Mac fonts to Amiga fonts. Binary only.

ModulaTools Various useful routines for those programming in Modula on theAmiga. Update to version on disk 94, includes source.

Vt100 Two new versions of Dave's vt100 terminal emulator. One version, based on vt100 2.6, has been enhanced to include an iconify feature, add full 132 column support using overscan, and other miscellaneous features. This version is available in binary only. The second version is release 2.8 of the mainstream version of vt100. This one includes source.

DISK 139

AmiCron An enhanced and debugged version of AmiCron 2.3 from disk number 113. Includes source.

ListScanner A nice little utility to display all the Exec lists. Somewhat like the Xplor utility from disk 73. Includes source in assembler.

ProCalc A program that simulates an HP11C programmable calculator. Includes both English and German version. Shareware, binary only.

RemLib Removes a specified library (if currently unused) or displays some information about all available libraries. Includes source in assembler.

TurboBackup A fast mass floppy disk duplicator with enforced verify mode to prevent generation of incorrect copies. V.1.00, binary only.

WArranger Sends a window, identified by its name, to the front or to back, without selecting it. Useful in conjunction with AmiCron. Works on all screens. Includes source in assembler.

WheelChair Sim A wheelchair simulator developed as a project for the Technical Resource Centre and the Albert Children's Hospital, to allow the matching of a wheelchair joystick to a child's handicap and allow the child to practice using the chair in a safe (simulated) environment. Binary only.

DISK 140

SBProlog Volume 1 of the 2 volume Stony Brook Prolog (SBP) distribution, version 2.3.2. This volume contains the executables and libraries. Volume 2, on disk 141, contains the C and Prolog source code. From the SBProlog System, Version 2.2 User Manual: "SBProlog is a publicdomain Prolog system for Unix(tm) based systems originally developed at SUNY, Stony Brook. The core of the system is an emulator, written in C for portability, of a Prolog virtual machine that is an extension of the Warren Abstract Machine. The remainder of the system, including the translator from Prolog to the virtual machine instructions, is written in Prolog." In addition to providing a compiler, SBProlog also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables, a debugging facility offering two levels of tracing, profiling tools, and other utilities.

DISK 141

SBProlog Volume 2 of the 2 volume Stony Brook Prolog (SBP) distribution, version 2.3.2. This volume contains the C and Prolog source code. Volume 1, on disk 140, contains the executables and libraries. (For description see Disk 140.)

SmallC An Amiga port of the SmallC compiler, written by Ron Cain. SmallC is a rather small subset of the full "C" language. However, it is capable of compiling itself, and other small, useful programs. Requires an assembler and linker to complete the package and produce working executables. Includes source and binary.

DISK 142

Diff A program that uses the same algorithm as the Uni diff program and also produces context diffs, suitable for use with patch. This is the same version that was distributed on disk 138, but now includes the missing files (including source code).

FracGen A fractal generator program that generates fractal pictures from "seeds" that you create. This is unlike any of the other "fractal generators" I've seen. It can be used to load and display previously created fractal pictures, modify existing fractals, or create your own fractals. Version 1.1, binary only.

SciSubr The Scientific Subroutine Package from DECUS, ported to the Amiga to run with Absoft Fortran. This is a valuable resource of mathematical and statistical source code for those doing Fortran work on the Amiga.

DISK 143

Rim RIM5 (Relational Information Manager) is a full relational DBMS that is suitable for VERY large databases using BTree data storage. It has a crude (by today's standards) user interface, but since full source code is provided, this can be fixed. Versions of RIM run on a wide variety of systems, small and large, and produce compatible databases. Also includes a built in HELP database and a programming language. Full Fortran source code and documentation included.

DISK 144

AnalytiCalc This disk contains a copy of Glenn Everhart's large and powerful spreadsheet program called AnalytiCalc, submitted to me directly by Glenn for inclusion in the library as an update to the version released on disk 104. Source and documentation is included on the disk in arc'd form because it otherwise would not all fit on the disk.

DISK 145

Csh This version has been modified to provide file name completion and argument execution (via the grave accents mechanism). Requires ARP 1.1 to run. Binary only, but includes diffs for the reference 2.07 source base.

DMouse Another very useful program! This is a versatile screen blanker, mouse blanker, auto window activator, mouse accelerator, popcli style programmable command key, pop window to front, push window to back, etc, widget. Version 1.06, includes source.

DNet A link protocol that provides essentially an unlimited number of reliable connections between processes on two machines, each end of the link can be either an Amiga or a Unix (BSD4.3) machine. Version 1.20, includes sources for both the Amiga and Unix versions.

Tab A tablature writing program for the Amiga, with intruments for a banjo and a string guitar. Binary only. Author: Jeff deRienzo

TinyProlog VTPROLOG is a simple prolog interpreter provided with full source code to encourage experimentation with the PROLOG language and implementations. Version 1.1, includes source.

DISK 146

Blanker2 A screen blanking program that turns the screen black after 90 seconds of keyboard and mouse inactivity. V1.27.88, includes source.

CLight A demonstration copy of a commercial ray tracing program, which is identical to the commercial version except that it has been limited to ten objects per scene. Binary only.

CrcLists Complete CRC check files for disks 129141 and disks 143145 of the library, using the crc program from disk 133. Made directly from my master disks. Disk 142 is omitted because of a problem with the crc program.

DmeMacros A set of DME macros which utilize templates to turn DME into a languagesensitive editor for C, Pascal, Modula2, and Fortran.

MemoPad Shareware intuitionbased memo reminder program. Nicely done. V.1.1, binary only.

DISK 147

This disk contains the latest version of **MicroGNUEmacs** (MG 2b). Many additions and enhancements since the original works by Dave Conroy. Large amount of credit should go to the vast number of contributors and Beta testers.

EFJ "Escape from Jovi" Machine-code game featuring hi-res scrolling, large playfield, disk-based Hi-Score list, stereo sound, and multiple levels. Use a joystick in port 2 to control the ship. Binary only, shareware.

Fme Nicely done map editor for Fire-Power (tm) game. Interlaced hi-res with intuition interface. Includes source.

HandyIcons Adds a menustrip to the WorkBench window that allows you to run selected Workbench Tools by menu selection. Can be set up to provide custom environments. Current version supports only WorkBench Tools and not Projects. Binary only.

Scrambler Simple program that will encode/decode a text file into illegible gibberish, which resembles executable code, to evade prying eyes. V.0.01, Binary only.

DISK 150

AirFoil Update to Airfoil generator on disk 71. Generates airfoil models as well as their corresponding streamline and pressure distributions. Includes source.

DC10 AmigaBasic DC-10 instrument flight simulator. Appears to be quite in-depth with flight-planning and take-off options along with an extensive documentation file. Requires rebuilding on separate disk - successfully done by following author's instructions in ReadMeFirst file.

ExecLib Working example of how to build and use user-defined disk-resident libraries. Special

interest to developers working with Lattice C.
IconIzer Utility program that saves current mouse pointer to a small icon. Restore the pointer just by double-clicking on its icon. Allows for building a whole library of pointers and to use them whenever you want. Binary only.
Pilot Implementation of the PILOT language for the Amiga, including demo done for the National Park Service. PILOT is a limited use language for use in educational and computer based instruction programs. Binary only with Beta test kit available from authors.
StealMemBoot Small utility designed to be a direct replacement for NoFastMem kind of programs. Modifies the boot block of a disk, so when you boot with it, all memory allocations will return only CHIP memory.

DISK 151
GlobeDemo Graphics demo which displays very smooth transitions of the rotating earth. Pop-up menu. Includes source.
Icons Yet another potpourri of interesting icons.
Pcopy Small intuition-based disk copier similar to the resident "DiskCopy" except with write-verify and other user-selectable options. Useful for making multiple copies with reliable data. Requires two disk drives. Includes source.
SCT CLI-based utility (SetColorTable) for displaying and/or setting a screen's colors. Save colors of a screen to be restored later, or copy one screen's colors to another. Includes source.
SlideShow Very nicely done slide-show program written in assembly language. Forward/backward presentation and creative screen wipes. Currently works only with IFF lo-res pictures. Executable only along with some new IFF pictures to have come my way. Shareware.
Surveyor Little utility that opens a window on the current screen and displays information about the pointer. Allows for absolute or relative measurement between two points on the screen. Very handy for precise positioning of icons and such. Includes source.

DISK 152
Blk Requester making tool employing various recursive algorithms including a recursive parser. Takes input text files and converts them to C-source for including as requester declarations. Includes source.
RunBack Variant of Rob Peck's RunBack-Ground program from disk 73. Allows you to start a new CLI program and run it in the background, then closes the new CLI. This version automatically searches the command-search-path to find the program. Includes source.
UUCP This is a version of uucp (Unix to Unix Copy Program) for the Amiga, along with some miscellaneous support utilities like cron, mail, and compress. Includes source.

DISK 153
Dme V.1.30. Simple WYSIWYG editor designed for programmers. Not a WYSIWYG word processor in the traditional sense. Arbitrary key mapping, fast scrolling, title-line statistics multiple windows, and ability to iconify windows. Update to version on disk 134, includes source.
HP11 Emulates an HP11C calculator including the program mode. ON/OFF button that turns the calculator into an icon that will sit and wait until you need it again. Documentation on the features is scarce. Binary only.
HPMam Manipulate settings and fonts on HP LaserJet+ printers and compatibles. Includes an intuition interface and some sample picture files. V.1.0, binary only, shareware.
Synthemania Interesting, very small (and very persistent!) musical piece. If you plan on stopping it without using three fingers, you better read the document file first! Binary only.

DISK 154
Ada An Ada Syntax checker. Includes lex and yacc source.
AssemblyDemos Interesting group of assembly language demos for your visual and aural pleasure. Binary only.
DiskLib Two utilities for those who like to split up PD disks into disks of different categories. Includes source.
Guardian Virus diagnosing and vaccination program. Recognizes any non-standard bootblock. Includes a small utility program to permanently place the program on a copy of your kickstart disk in place of the seldom (if ever!) used Debug function. Binary only.
PrintSpool Print-spooling program. Very useful for printing files in the background. Many command-line options. V.1.0.0, Includes source.
Utilities Group of four little utility programs, Cal, Undelete DClock and Where!s. Binary only, see the ReadMe file for a description of each.
VirusX Update to the virus-detecting program of the same name on disk number 137. This version also checks for the Byte-Bandit strain. Version 1.21, Includes source.
Virus-Alert! Anti-virus program with a twist. Once installed a message is displayed just after a warm or cold boot notifying the the user that the disk and memory are virus-free, and forcing a mouse-button press before continuing. Anything writing to the bootblock thereafter will destroy the message and a normal virus-infected boot will take place. Versions 1.01 and 2.01, Binary only.
Wicon "Window Iconifier". Turn your windows into small icons which can be later recalled. Currently installed with MacWin to give your windows a "rubber-banding" effect. V.1.14, Includes source.

DISK 155
AsmExamples Couple of assembly code examples. Executables are not extremely useful but the code might be of considerable benefit to beginning assembly language programmers.
Bison Replacement for unix "yacc" command. From the GNU (GNU is Not Unix) effort. Contains updates to the version on disk 136. Includes source.
NoSmoking Sample program showing use of a recoverable alert while displaying a personal health message. Includes source.
Scenery Very nice assembly language random scenery generator. Generates very realistic looking landscapes. Includes intuition interface and lots of menu options. V.1.0, binary only.

DISK 156
Blocks2 Amusing and colorful display of a moving trail of "blocks". Update to version on disk 71, however this version also includes source.
Flex Replacement for the UNIX "lex" (lexical analyzer generator) program that is faster than lex, and freely redistributable. Includes source.
Go64 Screen hack aimed at an earlier Commodore product (Not to be confused with the commercial product Go-64! from Software Insight Systems). Includes source.
Grammars Group of lexical grammar files for Ada, C and Pascal for use in conjunction with the flex program on this disk and the bison program on disk 155
OOPS! Tired of the monochrome background color of your Workbench or CLI? Then try this colorful screen hack to brighten things up! Includes source.

DISK 157
60or80 Small utility to toggle 60/80 column text modes without having to go through preferences. Works from either the CLI or the Workbench. Includes source.
AmicForm Creates a phonebook containing only those area codes and exchanges reachable through PC-Pursuit. Input any of Chet Solace's Finalist BBS lists and it creates the phonebook in a form usable by AmicTerm and a number of other popular terminal programs. V.1.3, Binary only.
AnimBalls Nifty little animation program that allows you to create a collection of balls in three-space and then interactively rotate them in real time using the mouse. Includes source.
BootBack Handy little utility to copy and save the boot block from a disk, then later restore it should the disk get stomped on by some ugly virus. Includes source.
ECPM CP/M emulator. Emulates an 8080 along with H19 terminal emulation. Update from version on disk 109. Includes source.
KeyFiler BBS message file sorter that allows sorting by keyword. Includes a textreader, Soundex matching, and limited wildcard capabilities. V.1.0, Binary only.
ScreenZap A little utility to clean away screens that are left by ill-behaving programs. It will kill every screen behind the WorkBench, noting how many it gets. The screens in front of WB are not affected. Includes source.
SetPrefs Allows you to build a whole library of preference settings and instantly switch back and forth between them. Affects all preference settings not just the colors. Very useful for machines with multiple users or multiple external devices. Includes Amiga's default and various sample preference settings. Binary only.
Xicon Lets you use icons to call up scripts containing CLI commands. V.2.01, update to version on disk 102. Includes source.

DISK 158
DiskX Nicely done Sector-based disk editor. Binary only
MemBoardTest Originally designed for production testing of A1000 memory boards. Very nice intuition interface. V.2.4, Includes source in Modula.
MSDOS Lists files written in standard MS-Dos or Atari ST format. The files can then be copied to Ram and rewritten to disk in Amiga-Dos format. Binary only, Shareware, V.0.1.
PCBTool Early version of shareware PC Board layout program. Lots of options including variable size pads and traces, grids, grid snap, layers, zoom, selectable centering, text and more. Does not support printer/ plotter dumps or libraries. V.2.6, binary only.
ScreenX Handy little background utility that provides a small clock/memory counter in its inactive mode and a versatile screen manipulator when called upon. Binary only with source available from author, V.2.1.
TaskX "Real-time" task editor. Lets you list and set the priorities of all the currently running tasks. Binary only, Version 2.0.
VirusX Update to the version on disk 154, checks for a couple of additional new strains. Includes source, V.1.6.
YachtC3 Update to the Yachtc program on disk 10, contains some fixes and incorporates a simple sound process. V.3, includes source.

DISK 159
Free Little command to put in your c directory that returns memory status and number of tasks currently served by EXEC. Includes source.
MidiTools Group of several different utility programs for Midi system. Binary only.
StarChart Nicely done intuition based program to display and identify about 600 stars, galaxies and nebulae visible in the Northern hemisphere. V.1.2, includes source.
TaskControl Nicely done task-handling program allowing you to put to sleep, kill or change priorities of all the currently loaded tasks. Also potentially GURU-producing, so be careful what tasks you kill, changeetc. Handy window sizer will reduce it almost to an icon to hang around until you want to use it. Binary only.
TUC "The Ultimate Clock". Another window title clock/memory minder. This one is in 132 columns! Also gives the free memory on drives DF0, DF1 & DF2. Includes source.

DISK 160
Calls Little utility to help analyze the flow of a C-program by laying out the functions called in a hierarchical manner.
Check Useful little utility for finding structural errors in C-source code. Many command-line options. V.1.03, binary only.
DisA 68000 disassembler, written in assembly, update to version on disk 128. Includes source.
DMouse Versatile screen & mouse blanker, auto window activator, mouse accelerator, popcli, pop window to front, push window to back, etc. widget. V.1.09, includes source. Update to version on disk 145.
DWIP "Daisy Wheel IFF Printer". Graphics printing utility that allows the printing of IFF pictures on a daisy wheel printer. Includes source.
M4 UNIX M4 look-alike macro processor intended as a front end for Ratfor, Pascal, and other languages that do not have a built-in macro processing capability. Reads standard input, the processed text is written on the standard output.
MemoPad Shareware intuition-based memo reminder program. Nicely done. Update to version on disk 146, V.1.2, binary only.
NeuralNets Neural network example using the generalized back-propagation delta rule for learning, specifically applied to the tabula rasa Little Red Riding Hood instance.

DISK 161
Friends Cute little screen hack with command-line options to keep your mouse pointer company when you step away. Includes source.
Getsprite Simple little program to convert Dpaint brushes into C-source. Binary only.
IncRev Handy little program that will automatically increment the revision number of a program every time it is recompiled. Binary only.
LGZA Map generator/editor for the LGZ game. Not extremely useful if you don't happen to play that game, but good source example of intuition interfacing. V.0.1.
Mackie Versatile cli/macro-key initiator based on POPCLI with unique method of "screen-blanking". I won't say more, just try it! V.1.1, includes source.
Nag Shareware appointment calendar with its own editor and unique 'nagging' feature utilizing Amiga's voice and audio devices. V.1.6, binary only.
Perl Practical Extraction and Report Language, interpreted language optimized for scanning arbitrary text files, extracting information from those text files, and printing reports based on that information.
VRTest Anti-virus utility that allows visual inspection of ram starting a $7E7FE, ram cleaning, bootblock inspection and vector monitoring/ reseting. Written entirely in assembly language V.3.2, binary only.
XBoot Very simple utility to convert a boot block into an executable file so you can use your favorite debugger (Wack, Dis, etc.) to study it. Includes source.

DISK 162
Avi Workalike version of the UNIX vi editor for the amiga. Though not especially recommended for beginners, designed for those who may have the vi commands permanently hard-coded into your fingertips! V.1.0, binary only.
CLI-Utilities This directory contains several subdirectories with small utilities, collected from various sources, that are only usable from the CLI. See the Readme file for further information. Some include source.
Dark Small graphics and animation demo. Includes source.
Flow2Troff Little utility to convert from New Horizons Software "FLOW" files to UNIX "troff" files, suitable for printing on any troff-compatible laser printer. V.1.0, includes source and a sample "FLOW" file.
LabyrinthII Shareware role-playing text adventure game similar in operation to the Infocom text adventures. Includes source.
Iffar Maintains archives of Interchange File Format (IFF) FORM, CAT and LIST files in a manner that complies with the IFF CAT specification. V.1.2, includes source.
SetPALorNTSC Couple of utility programs for testing suitability of a developed program in either the PAL or NTSC environments. Includes source and a sample program.

TES "The Electronic Slave" adds a gadget strip to the top of the cli window to perform such functions as device directories, info, run ED, and time. Currently, assignments are hardcoded but not difficult to change if you own a compiler. V.1.1, includes source.
UnknownGirl Small musical piece similar in execution to "Synthemania" on disk 153. Binary only.

DISK 163
Bankn Complete checkbook system offered by the author as shareware. Update to version on disk 120. V.1.5, binary only.
FiveInLine Board-playing game similar to Go-Moku, Ristinolla, etc. Fast-paced and quickly addictive! Includes source.
MachII "Mouse accelerator" program that also includes hotkeys, the features of sun mouse, clicktofront, popcli, title bar clock with a bbs online charge accumulator, and more. Update to version on disk 130. Version 2.4c, binary only.
MemTrace Routines to help debug memory allocation and freeing during program development. Will complain if you try to free memory you didn't allocate and will report on memory not freed when your program finishes.
PcPatch Patches for PCCopy and PCFormat from the 'EXTRAS 1.2' disk, to allow reading/writing/formatting 3.5 inch 360k (2 sides/ 40 Tracks/9 sectors) MS-DOS disks.
ReadmeMaster Nifty little database for finding those programs that you know exist somewhere in the AmigaLibDisk library. Maintains a keyword dictionary of the Contents descriptions that allows searching by disk number, program title, author's name, or some other descriptive word. Currently supports disks 1-154 with planned updates from the author. Binary only.
View Mouse-oriented text file reader. Sample operation is demonstrated in reading the View.doc file, instead of using the usual "Less" text file reader.

DISK 164
C-Functions Group of four little C-functions to add to your library to make your programming life a little easier. Includes source and small demo program showing some of the results.
DiskSalv Very useful program to recover files from a trashed AmigaDOS disk. Can also "undelete" files deleted by mistake, so long as they have not been overwritten by further disk activity. Requires two disk drives. Many enhancements since the original version on disk 20. V.1.3, Binary only.
Hed Handy little editor that is more user-friendly than "Ed", yet doesn't require the memorization of complicated keystrokes of some of the larger, more powerful, editors. Binary only.
Newton Uses "Newtons Method" algorithm to estimate both real and imaginary roots of a polynomial of degree 20 or less. V.1.0, includes source.
NewZAP Third-generation multi-purpose file sector editing utility, from the author of FileZAP. Displays and edits full 512-byte sectors via a 106 character wide internal font. Includes search feature to find specific strings or hex digits, forwards or backwards. Update to version on disk 58. V.3.18, Binary only.
PcView Provides PC community with opportunity to display IFF pictures to best of EGA's ability. Displays Amiga pics, IBM-PC Deluxe Paint Pics, Apple II-GS Deluxe Paint Pics, and others in the IFF standard format. Includes source.
PolyRoot Polynomial root-finder using the Newtonian algorithm. Nicely done in AmigaBasic with good documentation file. V.2.00.
PrtDrivers Two new Printer Drivers. One for Digital Equipment's LN03+ laser printer, one for Mannesmann Tally's MT420d dot matrix.
Zoo File archiver, much like "arc" in concept, but different in implementation and user interface details. Includes some nice features that "arc" lacks (such as file/path names up to 255 characters in length). V.2.00, update to version on disk 138. Binary only.

DISK 165
Conman Extremely useful replacement for the standard console handler, provides line editing and command line histories. Completely transparent to any application program that uses CON: windows. Shareware. V.1.3, binary only, update to version on disk 133.
CPM CP/M emulator independently authored from the version that appeared on disk 157. Emulates a CPM computer with a Z80 processor connected to an ADM3A terminal. Assembly source included.
Parsnag To aid in performing color separations on Epson JX-80 printers. Includes source.
PlotView Couple of programs, Plotview and Plot2Am, for viewing UNIX plot files. Also two sub-directories: Plot - a device independent plotting package for the Amiga, compatible with the UNIX plot subroutine package and Plot2Tek - converts UNIX plot format files to Tektronix 410x terminal graphic commands. Source included.
RamCopy Copy program designed for machines with 1 meg or more of Ram and only one disk drive. Allows you to copy a complete disk in only one pass.
SPUDclock Simple program that uses the narrator device to speak the time at certain user specified intervals. Lots of command line options. V.1.2, includes source.

DISK 166
AutoGraf Collects and graphically displays information on auto mileage. Miles per gallon, cost per mile, miles driven, highs, lows, averages, etc. Sample data file, a couple of utility programs and source. V.1.0
Cref C cross referencer program. Prints out your code with line-numbers and complete keyword cross-referencing. Update from version on disk 103 which had a serious bug. Includes source.
MultiCalc RPN type graphic calculator. Generates answers with extreme precision (if 3000 digits is enough!) 48-digit scrollable display, mouse driven with lots of keyboard shortcuts, and iconification during non-use. Binary only
Stevie Public domain clone of the UNIX 'vi' editor. Supports window-sizing, arrow keys, and the help key. V.3.10a, includes source.

DISK 167
CDecl English to C (and vice versa) translator for C declarations. This little gem will translate english such as "declare foo as pointer to function returning pointer to array 10 of pointer to long" into "long *(*foo())[10]", and vice versa. Update from version on disk 114. Includes source.
CLIcon Runs cli programs from the workbench, similar in operation to IconExec, but more versatile.
CloseMe Another ingenious perversion in the screen hack category. Don't miss this one...surely destined to become a classic! Includes source.
DSM (Dynamic Sound Machine) Demo version with "Save" disabled of a program that will take any IFF sound or raw data and save it as a totally self-contained, runable program.
MRPrint Cli-based text file printing utility with lots of nice features, including tab-to-space expansion, page headers, line numbers, margin control with line-splitting and pagination correction, ARP wildcard support, etc. V.3.1, Includes source.
Smus3.6a Enhanced version of the smus player that last appeared on disk 58.
Sounddemos Some very nice demos for showing off the incredible audio power of the Amiga! 100% assembly language, make sure you have the stereo connected for these!

DISK 168
This is the first disk of a two disk "Matt Dillon special" containing binaries and sources to the latest versions of a great deal of Matt's many programs. For a complete listing of the programs on these two disks, see the file called "README". Because of the nature of Matt's programs and the need for his support libraries to recreate many of his programs, I opted to keep these disks pretty much as Matt sent them to me, rather than follow the usual AmigaLibDisk format of binaries and sources in one directory. This would have undoubtedly increased this to a three disk set. Please note that if you plan on recreating any of these programs, then it is quite possible that you will need information from both disks. - Fred

DISK 169
This is the second disk of a two disk "Matt Dillon special" containing binaries and sources to the latest versions of a great deal of Matt's many programs. See comments on Disk 168. Please note that if you plan on recreating any of these programs, then it is quite possible that you will need information from both disks. -

DISK 170
Aftterm Commmunications program utilizing IBM 3278 terminal emulation. Binary only.
Dis6502 Ported 6502 disassembler with support added for C64 binary files. Includes source.
FastText Blitter based fast text rendering routines written in assembly. Unique that they speed up rendering of non-proportional fonts of any height, and from 4-16 pixels in width. Source and test program included.
MRBackUp A hard disk backup utility that does a file by file copy to standard AmigaDOS floppy disks. Includes intuition interface and file compression. V.2.4, update to version on disk 129. Binary only.
PtrAnim Nifty pointer animation program, includes lots of samples, a utility program and instructions on creating your own animations. Be sure to also read the "Disclaimer" in the author's ReadMeFirst file. Binary only, shareware.
Surf Generates bezier surfaces of revolution. Will produce some amazing pictures of wineglasses, doorknobs, or other objects one could turn on a lathe. Includes the capacity to map IFF image files onto any surface that it can draw. Source included.
Turbo Opens a small window with a gadget that when selected, turns off bitplane, sprite, copper and audio DMA, presumably to increase system speed. Includes source.

DISK 171
AZComm Modified version of Comm 1.34 that contains Zmodem send, receive, and resume receive. V.1.00, Binary only.
Maze A couple of very nice demos for the creation and use of single-solution mazes, one of which is practically a stand-alone game. Includes source.
GuntherSozobon-C Atari ST version of what appears to be a full K&R freeware C-compiler, assembler and linker. The compiler main pass and the assembler were compiled and tested on an Amiga A2000 with only minimal changes, and they appear to work (to the extent that they believe they are running on an Atari-ST), so an Amiga port should be relatively easy.
Xoper Very comprehensive program to monitor and control system activity. Monitor cpu, memory usage, ports, interrupts, devices. Close windows, screens, show loaded fonts or last Guru code number. Clean up memory, flush unused libraries, devices, fonts. etc. and lots more! Spawns its own process. A very handy background task. Assembly source included.

DISK 172
DataToObj Utility to convert raw data files (sprites, image data, text, etc.) directly into object code which can then be linked to the main program without the need to go through the compiling process. Includes source.
Handshake Full featured VT52/VT100/VT102/VT220 terminal emulator. The author has taken great pains to support the full VT102 spec. Now supports ANSI colors, screen capture and more. Update to version on disk number 60. V.2.12a, binary only, shareware.
MFix Small program to insert in the startup-sequence of the commercial program, Marauder II, from Discovery Software. Whenever the copy process is started, the rainbow screen is covered by a bare screen until the copy is finished. The author claims a 25% decrease in copy time is achieved. V.1.0, binary only.
PopInfo "Shrinkable" workbench utility to show some info that Workbench doesn't, such as free memory on external devices, chip, fast, and total ram usage and more. V.2.0, Includes source. **ProCalc** Program that simulates an HP-11C programmable calculator. Lots of enhancements and bug fixes since the original version on disk 139. V.1.2, binary only, shareware
Spiff Make controlled approximations between two files. Similar to "diff" but more versatile. Allows for handling of numerals as string literals or numeric values with adjustable tolerances. Provides for embedded commands, scriptfiles, and many other command-line parameters. Potentially very useful, but needs some Amiga-specific work. Source and some example files included.

DISK 173
CrcLists Complete CRC check files for disks 146-172 using the crc program from disk 133. Made directly from my master disks.
FileSelect FileIO selector, written 100% in assembly. V.1.0, includes source.
IffLib Ready-to-use library to perform various manipulations on IFF files. Includes a sample IFF viewer and a utility to save the front screen as an IFF file.
ILBM2C Very useful utility for C-programmers. Reads in a standard IFF ILBM file and outputs a file that can then be included in your program. Includes source and a sample program.
Tetrix Addictive game of speed, skill and luck. Based on a game originally called Tetris. The object is to fit together oddly grouped falling blocks to create a solid wall, which is then cleared from the bottom up. Shareware, Version 1.1, Binary only.
Uedit V. 2.4g of this nice shareware editor. Learn mode, a command language, menu customization, and other user configurability and customizability features. Binary only, shareware, update to version on disk 121.

DISK 174
Castle Simple graphics adventure game suitable for beginners. Binary only, but source available with small donation to the author.
Iff2Sun Small utility for those with access to a Sun workstation. Takes an Amiga IFF file and converts it to a Sun rasterfile format. Source only, as the program needs to be re-compiled and run from a Sun.
Print1.2 Another CLI-based printing utility with several nice features including the ability to print in ASCII or HEX, with or without line numbers and a CTRL-C Trap. Includes source.
Sh Another version of the 'Sh' utility to unshar shell archives. Apparently corrects some problems encountered by similar programs. Includes source.
Strings Simple utility with command-line options for locating strings in a binary file. V. 1.0, includes source.
TitlePage Prints banner-type title pages for identifying listings. Lots of command-line options for specifying various fonts, pitches, typestyles, selectable centering, etc. Includes source.
Tunnel Interesting graphics demo written in TDI-Modula 2. I suggest you don't stare at this too long! Includes source.

DISK 175
Elements Very nice interactive display of Periodic Table of Elements. Can display a large amount of pertinent data about a selected element along with a good deal of general and mis-

cellaneous info.
Furnish For those who have used the "scale size cut and place" method of determining your next living-room arrangement, this Amiga-ized version may be just what you need. Binary only, shareware.
Plot Compute and plot 3 dimensional functions. Major revision to PD version on disk 49 by the same author. V.4.1, binary only, shareware.
SafeBoot Very handy intuition-based program to read and save custom bootblocks. The bootblock can then be later restored should the disk become virus-infected. V. 2.2, binary only.
SendMorse Brush up on your morse code with this simple program that will read an input text-file and output characters at an adjustable rate.
VirusX V. 3.10 of the popular virus detection/vaccination program. Features a test for the new IRQ virus, among others, and a new "Kill Virus" utility. Includes source.
WBDepth CLI program that allows you to change the number of bitplanes for the WB screen on the fly. Very useful for A500 and A2000 users with kickstart in ROM. Binary only.
Zippy "Graphical Shell". Opens a medium-size window and attaches a menu-strip for performing all sort of disk/data manipulations. Features script files allowing you to attach custom menu selections as you move between directories. Also Intuition based utility for altering FileInfo data. (filename, filenote, etc.) V.2.5, binary only.

DISK 176
Contains version V23-2A of Glenn Everhart's large and powerful spreadsheet program called **AnalytiCalc**, submitted to me directly by Glenn for inclusion in the library as an update to the version released on disk 144. AnalytiCalc is presented in entirely ZOOed form because it could not otherwise fit on a single disk. Because the auxiliary utilities were presented on disk 144, they are not repeated here. The ZOO utility is used due to the lack of controversy over the format. The public domain BOOZ program is provided to extract the contents of the ZOO archives provided. With this release, AnalytiCalc has become "Freeware" rather than "Shareware". Thus the only restrictions on AnalytiCalc code are that derivative programs remain freely distributable.
HyperNet Small hypertext shell program for Amiga, presented with sources and brief documents. Allows a "master" AmigaDos process to control a series of connected processes, where the connections are randomly ordered directed graphs. Permissible "child" processes available at any stage are governed by links of graph. Implementation is mainly instructive, but can be used for tutorials or demonstrations and illustrates the simplicity of hypertext concepts on a multi-tasking system.

DISK 177
ASpice Version of the SPICE 2G.6 circuit analysis program which has been modified to run in the Amiga environment. The program arrays are adjusted to require one forth the memory of the DEC VAX version. Requires a minimum of 1.5 MB memory. This version neither supports nor requires the 68020 processor or 68881 coprocessor. Binary only.
DiskSalv V.1.32 of the popular "undelete" and file recovery program. Fixes a few bugs apparently found on version 1.3 on disk 164.
Jask An Intuition-based replacement for the ASK command. Will bring up a requester with a message and boolean yes/no type gadgets. V. 1.0, includes source.
Marge Simple CLI utility to add a specified number of spaces or tabs to the left side of every line in a file. Includes source.
Path Interesting concept in path-searching. Contains a path-handler that allows you to selectively control or assign your system's search path using script files. Includes source.

DISK 178
AmicForm Creates a phonebook containing only those areacodes and exchanges reachable through PC-Pursuit. Update to version on disk 157. Works with the new Finalist BBS format. V. 1.4, Binary only.
BlackBox The black box is an 8x8 grid in which several "atoms" are hidden. Your job is to find the atoms. You have a ray projector which you can use to send rays into the box from any of the 32 spots around the box. Binary only.
CIATimer Two versions of ciatimer routines to provide precise timing for applications requiring a high-accuracy real-time clock. Includes source and a sample executable.
Cosmic Interstellar multiplayer game of War and Peace. From the looks of the documentation file, it appears fairly extensive! V. 1.01, includes source.
Ls V. 2.0 of the popular UNIX style directory lister. Revised for Lattice 5.0 and made 1.3 compatible. Includes source.
RemLib Removes a specified library (if currently unused) or displays some information about all available libraries. Update to version on disk 139, V. 1.11, includes source in assembler.
RexxArpLib V.2.0 of rexxarplib.library, which has grown considerably, with substantial intuition interface support. Also included is a large number of ARexx macros.

DISK 179
DietAid Diet planning aid to allow the user to compile lists of ingredients (recipes) and automatically compute calorie totals, etc. Update to version on disk 36. V. 3.1, binary only.
Dmake Beta release of Matt's version of the UNIX make utility. Features multiple dependancies, wildcard support, and more. Includes source.
Exception Set of error handling routines that provide a programmer with the ability to easily handle often difficult to implement routines. Routines such as no more memory, file not open, read/write error, etc. V.0.6, includes source.
KickFont For A-1000, will permanently replace the topaz font on the kickstart disk with a font called "look". Includes a sample in the form of an IFF picture. V. 3.0, binary only. Also 'Sum-Kick' program.
Launch Sample program showing how to load and execute a program in the workbench environment, then return to the CLI. Includes source.
Regexp Nearly-public-domain reimplementation of the V8 regexp(3) package. Gives C programs ability to use egrep-style regular expressions, in a much cleaner fashion than the analogous routines in SysV. Includes source.
TSnip Very nice "cut and paste" type utility with lots of uses and functions. Pop-up intuition control panel, multiple font and color recognition, clipboard and pipe support and a couple of utility programs. V.1.4a, source for support programs only.
UnixUtil A few CLI utilities, including some functionally similar to the UNIX utilities of the same names. Included are: Wc, Head, Tail, Tee, Detab, Entab, and Trunc. Descriptions are given in the included '.doc' files.

DISK 180
Browser Programmer's "Workbench". Easily and conveniently move, copy, rename, and delete files & directories from a CLI environment. Also provides a method to execute either Workbench or CLI programs. V.1.6, update to version on disk 134, binary only.
GeoTime Couple of interesting "clock" type programs based on the "Geochron". Observe the earth's shadow scroll across a map or globe in real-time, based on the system clock. V. 1.0, binary only, shareware.
GPrint Black & white graphics print utility for Epson compatible printers. Command-line options allow several different print qualities and densities. Includes a couple of sample IFF files for printing. V. 2.03, binary only, shareware.
Jed Nicely done, intuition-based editor, quite user-friendly. Word-wrap, auto-indent, newcli, alt buffer, split-window, keyboard macro, help, printing, and more. V. 1.0, binary only, shareware.
NoVirus Anti-Virus utility. Known and new virus detection, view boot block, save and restore bootblocks, several "install" options and more. Written in assembly. V.1.56, binary only.
RepString Nice little CLI utility to replace any type of string in any type of file with another string of any type. V. 1.0, binary only, shareware.
TrekTrivia Very nice mouse-driven trivia type program for Star Trek fans. Contains 100 questions with additional trivia disks available from the author. Binary only, shareware.

DISK 181
AMXLISP Amiga-ized version of the XLisp interpreter originally by David Betz. V. 2.00, includes source.
Bally Amiga port of former arcade game Click. This version completely lacks sound effects, to come in later updates. V. 0.1, binary only, shareware.
Tracker Useful debugging routines similar in function but more versatile to those of "MemTrace" on disk 163. Will track and report on calls to AllocMem(), FreeMem() [or lack thereof] among others. V. 0.0a (Alpha release).

DISK 182
AMC "Amiga Message Center". Scrolls a message from a text file across the screen on a colorful background. Similar to "greetings" programs developed by European Amiga enthusiasts. V. 1.0, binary only.
Edimap Keymap editor. Read in an existing keymap file, modify it to suit your needs, and save it as a ready-to-use keymap. V. 1.0, includes source.
HR136 IFF file containing a chart showing every possible mixture of the 16 basic palette colors. Also optimized and monochrome palettes along with several tips and techniques for using them with various paint programs.
Iconmerger Intuition-based program to take any two brush files and merge them into an alternate-image type icon. Version 2.0, binary only.
Sam IFF sound player with several command-line options. Includes several samples. V. 1.0, binary only.
SetFont Change the system font with various command-line options. Cleans up all known bugs in V2.0 released on disk 75. V. 2.5, includes source in C++.

DISK 183
FixFd Utility for Amiga assembly programmers. FixFd will read a '.FD' file and output a file that can be 'INCLUDE'ed rather than having to link with the colossal 'Amiga.Lib'. V.1.0, includes source in assembly.
Mklib Another example of building a shared library that evolved from "Ellb" on disk 87. Also included is a library, Edlib, which contains several functions not included in the Manx standard libraries. Includes source.
PCQ Subset implementation of freely-redistributable Pascal compiler. Supports include files, external references, records, enumerated types, pointers, arrays, strings and more. Presently does not support range types, the 'with' statement or sets. V.1.0, includes source and sample programs.

DISK 184
BI Small brush to to C-code image converter, intended to be used from CLI. V. 1.0, binary only.
CardMaker Programmer's aid for creating card image data that can be used in any card game that uses the standard 52 card deck. V.1.0, binary only.
DPS Demo version of a program that will allow you to take any IFF file and save it as a totally self-contained executable file, without the need for any IFF-viewers. V.1.0, binary only.
MouseUtil Intuition based program to change mouse speed without having to go through preferences. V.1.1, includes assembly source.
Print Small print utility to replace the "copy <filename> to prt:" command. Opens window displaying the filename being printed, length, and status bar showing percent completed. Also an abort gadget. V.1.0, binary only.
VacBench This amusing little screen hack will "clean up" your WorkBench screen for you when it gets too cluttered! Binary only.
World Text adventure game similar to the Infocom adventures of Planetfall and Starcross. Quite large with a tremendous variety of responses. V.1.02, includes source.

DISK 185
This is a copy of the official November 1988 Commodore IFF disk, sent to me directly by Commodore for inclusion in the library. The only changes I made were:
(1) Placed all the files in the "documents" directory into a zoo file "documents.zoo" to free up enough space to add my normal distribution files and icons. Some of the files on the disk were already in zoo format anyway, so this seems like a minor alteration.
(2) Changed the file "AboutThisRelease" to reflect the zoo'ing of the documents.
(3) Rearranged the icons to make room for my additional icons. - Fred

DISK 186
A68k 68000 assembler originally written in Modula-2 in 1985 and converted to C in 1987. Has been converted to accept metacomco-compatible assembler source code and to generate Amiga objects. Includes source. V.2.42, update to version on disk 110.
Cards'O'Rama Simple game that lets you push your memory. Played with a deck of 32 cards, grouped in 16 pairs. The cards are shuffled and then displayed at the beginning of each game. Your goal is to pick up as many pairs as you can, until there are no cards left on the screen. V.1.0, includes source.
Qt2 Cute program that gives the time the way many people do, I.E. "it's nearly ten to five". Includes source in assembly.
SimCPM CP/M simulator for the Amiga. Simulates an 8080 along with H19 terminal emulation. Includes source. V.2.3, update to version on disk 109.

DISK 187
Diskpert Disk benchmark program which runs on both Unix and Amiga. Update to version on disk 48, with bug fixes and more reliable measurements of the faster read and write speeds available under the new Fast File System.
HackLite Latest version of the Amiga port of Hack, with lots of Amiga specific enhancements and neat graphics. Now includes an easy to use installation program. V.1.0.0, binary only.
Mackie Versatile cli/macro-key initiator based on POPCLI with unique method of "screen-blanking". I won't say more, just try it! V.1.13, includes source. Update to V.1.1 from disk 161.
SetCPU Allows the user to detect and modify various parameters related to 32 bit CPUs. Includes commands to enable or disable text/data caches, switch on or off '030 burst cache line fill request, use MMU to run a ROM image from 32-bit memory, and to report various parameters when called from a script. V.1.4, includes source.

DISK 188
BootIntro Creates a small intro on bootblock of any disk, which will appear after you insert the disk for booting. Headline can be up to 20 characters. Scrolling text portion can be up to 225 characters. V.1.0, binary only.
DiffDir Compares contents of two directories, reporting on differences such as files present in only one directory, modification dates, file flags, sizes, comments, etc. V.1.0, includes source.

ExecDis Disassembler comment generator program for the 1.2 Kickstart ROM exec library image. Generates a commented disassembly of the exec library. V.1.0, binary only.
FastGro Fractal program, simulating Diffusion-Limited Aggregation (DLA) as described in the Dec 1988 Scientific American. This program is about an order of magnitude faster than the "SLO GRO" program described in Scientific American. V.1.0, includes source.
FracGen Fractal generator program that generates fractal pictures from "seeds" that you create. Unlike any of the other "fractal generators" I've seen. Can be used to load and display previously created fractal pictures, modify existing fractals, or create your own fractals. V.1.23, binary only, update to version on disk 142.
MemoryClock Clock program that shows the amount of free fast ram, free chip ram, as well as the time and date. Includes source in assembly code.
MinRexx Simple ARexx interface which can be easily patched into almost any program. Includes as an example the freedraw program from disk 1. Includes source.
Null New dos device that behaves like "NIL:" but unlike "NIL:", it is a real handler. This makes it useful in lots of situations where "NIL:" cannot be used. V.0.0, includes source.
TextDisplay Text display program, like "more" or "less", but about half the size and handles all screen formats (pal/ntsc, interlace/non-interlace, etc). V.1.1, binary only.

DISK 189
Mackie Versatile cli/macro-key initiator based on POPCLI with unique method of "screen-blanking". I won't say more, just try it! V.1.20, includes source. Update to V.1.13 from disk 187.
NetHack Part 1 of a two part distribution of NetHack, which was too large to fit on a single disk, even when zoo'd. Part 2 is on disk 190. Both parts, along with zoo to unpack them, are required to use or rebuild NetHack. V.2.3, includes source.
Uedit V.2.4g of this nice shareware editor. Learn mode, command language, menu customization, and other user configurability and customizability features. Binary only, shareware, replaces beta 2.4g version on disk 173.

DISK 190
GaryIcons Collection of more interesting and useful icons.
ILBM2Image Takes an IFF picture and generates a C source module which can be compiled and linked with your program to display the picture with the intuition DrawImage function. Binary only.
NetHack Part 2 of a two part distribution of NetHack, which was too large to fit on a single disk, even when zoo'd. Part 1 is on disk 189. Both parts, along with zoo to unpack them, are required to use or rebuild NetHack. V. 2.3, includes source.

DISK 191
BlitLab Lets you experiment with the blitter, to your hearts content, in relative safety. Opens a workbench window with gadgets for all the registers of the blitter, and allows you to manipulate individual registers and perform blits on a magnified bitmap. V.1.4, update to version on disk 84. Includes source.
Blk Requester making tool employing various recursive algorithms including a recursive parser. Takes input text files and converts them to C-source for including as requester declarations. Update to version on disk 152, with many enhancements. Includes source.
FileBootBlock Simple little program reads blocks 0 and 1 of a bootable disk and saves them as a program file that can be run (heaven forbid) or disassembled by programs like DIS or DSM. Includes source in assembly code.
ISpell Port of a Unix version of a freely distributable screen oriented, interactive, spelling checker. Update to version on disk 54. V.2.0.02, includes source.
Pz15 Computer version of those cheap plastic puzzles with 15 white tiles numbered 1 through 15 and an empty square in a 4 by 4 arrangement. More challenging since you can't solve it by prying out the pieces. Includes source.

DISK 192
Eval Manipulate expressions. Two main functions are evaluation and differentiation. Also does some basic simplifications (based on pattern matching) to make the result of a differentiation more presentable. Includes source.
PacMan87 Nice little "pacman like" game with some new features like fire pits, stabbing knives, electric arcs and flame throwers, that must be avoided. Three levels of difficulty. Sounds can be toggled on or off. Keeps record of the top ten scores. Shareware, binary only.
ReSourceDemo Demo version of ReSource, an interactive disassembler. Complete version except that the "save" features have been disabled. Version 0.36, binary only.

DISK 193
KeyMapEd Change the KeyMaps used with SetMap. Full featured editor providing support for normal, string and dead keys. Keyboard represented is from an A2000/A500 but it is fully compatible with A1000 keyboards. V.1.02, includes source.
Zc Modified version of Sozobon C compiler from disk 171. Modified to generate code compatible with the A68k assembler from disk 186 and a new frontend control program makes it easy to use like the UNIX "cc" frontend. V.1.01, includes source.

DISK 194
Moria Single player dungeon simulation. The object is to defeat the Balrog, which lurks in the deepest levels of the dungeon. You begin at the town level above the dungeon, where you may acquire supplies, weapons, armor, and magical devices by bartering with various shop owners, before descending into the dungeon to do battle. Amiga enhancements include pull down menus, graphics mode, pickup mode, a continuous move mode, a real time mode, a message wait time mode, as well as other modifications to improve overall playability and to take advantage of the unique features of the Amiga. V.3.0, binary only, requires at least 1Mb of memory.

DISK 195
MicroEMACS V.3.10 of Daniel Lawrence's version of Dave Conroy's microemacs. Update to the version on disk 119. New features include multiple marks, more function key support, a better crypt algorithm, an end-of-word command, a command line switch for setting environment variables, new hooks for macros, a command to strip trailing whitespace, internationalisation features like foreign language message support, horizontal window scrolling, much faster search algorithm, Amiga intuition support, and more. Includes source and extensive online documentation.

DISK 196
HamPics Some of the most stunning digitized pictures yet for the Amiga. They were scanned at a resolution of 4096 by 2800 pixels, 36-bits per pixel, on an Eikonix 1435 slide scanner, cropped, gamma corrected, scaled, and converted to Amiga IFF HAMfiles. Displayed with a special ILBM loader that handles overscan HAM images. Includes source for the display program.

DISK 197
CTags Create a tagsfile from the specified C, Pascal, Fortran, YACC, lex, or lisp sources. A tagsfile can be used by a cooperating editor to quickly locate specified objects in a program's source code. Berkeley V.4.7, includes source.
Find Utility which searches for files that satisfy a given boolean expression of attributes, starting from a root pathname and searching recursively down through the hierarchy of the file system. Very much like the Unixfind program. V.1.2, includes source. Update to V.1.0 on disk 134.
FixHunk Modifies executable files to allow them to run in external memory. Forces all DATA and BSS hunks in the file to be loaded into CHIP memory. CODE hunks will still load into FAST ram if available. New features include an interactive mode to select where each DATA or BSS hunk will load into memory, support for overlays, support for AC BASIC compiled programs, and support for new hunk types as used by "blink". V.2.1, binary only. Update to V.1.2a on disk 36.
Nro Roff style textformatter. V.1.5, update to version on disk 79. New features include generation of ANSI/ISO codes for bold, italics, and underline, more than one formatting command on a line, longer macro names, and many more formatting commands. Includes source.
Stevie Public domain clone of UNIX 'vi' editor. Supports window-sizing, arrow keys, and help key. V.3.35a, includes source. Update to V.3.10a on disk 166.

DISK 198
Charon Bradley's entry for the First Annual Badge Killer Demo Contest. The text of the demo was written by Lord Dunsany (long before the Amiga). Bradley created the illustrations and animation. The sound track is a traditional Scottish tune "The Arran Boat".

DISK 199
ASimplex Implementation of the Simplex algorithm for solving linear programs. Uses the standardized MPSX-format for input datafiles. V.1.2, includes source.
Csh V.3.02a of csh like shell derived from Matt Dillon's shell, version 2.07. Many new or improved commands, some bugfixes, etc. Includes source.
MIDIsoft Transfers sound samples between the Amiga and a Roland S-220. V.1.0, binary only.
Pyro Screen blanking program that goes beyond the normal. When there are no input events, pyro takes over and starts a little fireworks display in color. V.1.1, binary only.
SnipDemo Demo version 1.23 of signal processing program sold by Digital Dynamics. Binary only.
Viewer Very small program for displaying IFF pictures of any resolution. Written in assembly code and only 988 bytes long. Binary only.

DISK 200
NotBoingAgain Badge Demo entry. Interlaced HAM animation with nicely integrated sound effects. Great visual pun on the original Boing demo, but to say any more would ruin the effect. Binary only, requires 1 Mb of memory.
Tank Badge Demo entry. Animation of a "Disk-tank simulator", with sound effects and a cute twist. Binary only.

DISK 201
Draco Update to Chris Gray's Draco distribution. Enhancements include support for floating point, register variables, more optimization, improved call/return standard, etc. V.1.2, update to version on disk 76. Requires documentation from disk 77 to complete. Binary only.
DropCloth Lets you place a pattern, a 2 bitplane IFF image or a combination of a pattern and image, into the WorkBench backdrop. V.2.4, update to V.2.2 on disk 128. Shareware, binary only.

DISK 202
SlavicFonts A whole bunch of new fonts. V.1.0.
Vlt Both a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator, currently in use at SLAC (Stanford Linear Accelerator Center). Although the VT100 part was originally based on Dave Wecker et al.'s VT100, many enhancements were made. The program requires ARP, and it has an ARexx port. XMODEM 1K/CRC and Kermit protocol support also included. V.3.656, binary only.

DISK 203
Examples Assembly and C code examples, including some old favorites (like speechtoy and yachtc3) downcoded to assembly language. Replacement for the official audio device, example of creating a subtask, rewrite in assembly of R. J. Mical's file requester, example of installing custom input handler ahead of intuition, etc.
GurusGuide Sourcefiles for all examples published in the "Guru's Guide, Meditation #1: Interrupts" by Carl Sassenrath, the architect of the Amiga's low-level multitasking operating system and designer of Exec.
Isam Library of routines to access relational data base systems using the Index Sequential Access Method (ISAM). Beta version 0.9, binary only.

DISK 204
FileReq A simple file requestor, written as an exercise by the author to see how easy it would be (it wasn't). Includes source.
GnuGrep Grep program from the GNU project. Replaces grepfgrep, egrep, and bmgrep. Currently does not expand Amiga style wildcards, so to scan multiple files you will need to use it with a shell that does this for you. V.1.3, includes source.
HAMCu Installs a custom copper list for the current active view (usually workbench) that contains all the colours from 0x000 to 0xfff. Includes source.
Image-Ed Shareware icon editor submitted by the author. V.1.8, binary only.
JPClock Short clock program just packed with features. Includes source.
MouseBounce Short hack/game that makes your mouse pointer bounce around the screen. Object is to close the MouseBounce window and exit the game. Each time you click the mouse button, the pointer speeds up. Includes source.
PopDir Small utility which "pops open" to help you look at the contents of a particular directory on demand. V.1.4, includes source.
PopInfo Small utility which "pops open" to give you information about the status of your devices and memory. V.2.9, includes source.
Teacher Short, simple hack. I won't spoil the fun by telling you what it does. Includes source.

DISK 205
Bally Amiga port of former arcade game Click. Now has sound effects. V II, update to version on disk 181. Binary only, shareware.
BattleForce Nicely done shareware game, submitted by the author, that simulates combat between two or more giant, robot-like machines. Binary only, version 3.01.
Chess Port of a chess game posted to Usenet. Update to version first on disk 96. Upgraded to use Intuition interface. V.2.0, binary only.

DISK 206
All of this material is from the 1988 Badge Killer Demo Contest.
Brownian Demo based on both fractal theory and brownian motion. Includes source.
Hawk Stereo image of a hawk. Requires red/green stereo glasses to view.
MemFlick Treats all the memory in your Amiga like it was part of a bitplane inside a graphics display. Provides sort of a graphical picture of your memory usage. Binary only.
PeX Demo of the various graphics capabilities of the Amiga.
PictureGarden Another demo, apparently in compiled basic.
StereoDemo Demo of stereoscopic graphics, written in assembly language. Requires red/green stereo glasses to view. Includes sources.
Triple Three demos of some of the Amiga's graphics and sound capabilities. Binary only.

DISK 207
Coyote Entry to the 1988 Badge Killer Demo contest. Very cute (and large) animation. Requires about 1900 blocks of disk space, so it is distributed in "arcformat".

DISK 208
AsteroidField Entry for the 1988 Badge Killer Demo Contest. It is a large animation of a spacecraft flying madly through an asteroid field (chased by unseen foes) that includes a couple of near misses.

DISK 209
Bowl 1988 Badge Demo entry. A Sculpt-Animate animation that shows three colored balls flying in circles above a mirrored bowl. Rendering the animation took about 2 weeks. Distributed in zooformat because of its size (zoo program included for easy unpacking).
Dps Designed to work with the PrintScript program, a commercial PostScript interpreter for the Amiga, to provide a page previewer. V.1.1, includes source.

DISK 210
Calc Very nicely done scientific/programmer/plotter calculator. The scientific portion has most of the operations found on the more popular handhelds. The programmer portion has all the special hex/binary/decimal conversions as well as register operations like ASL, ROL, LSL, AND, OR, XOR, etc. The plotter portion will plot equations. Also 26 memories, full mouse or keyboard operation, pull-down menus, and iconization. V.3.0, binary only.
LabelPrint Allows you to easily print labels for your disks. V.1.9, shareware, binary only (source available from author).
NuHand Animation of hand with fingernails scraping on a desktop, including sound effects. Badge Demo entry. Binary only.

DISK 211
AmigaWave 1988 Badge Demo entry. Animation with sound effects.
Esperanto Keymap modification to usat which, in conjunction with the supplied slate.font, will allow one to type in Esperanto and Welsh. In any program that will use keymaps and fonts.
Image-Ed Shareware icon editor submitted by the author. Version 1.9, binary only. Fixes a serious bug in 1.8 version on disk 204.
SignFont Keymap and font that will allow the user to be able to type in American Sign Language, provided that one knows the font.
VirusControl New virus detection and control program that checks disks during insertion, protects from link viruses, shows bootblock on a screen, periodically checks system vectors, controls access to files with a requester, etc. V.1.3, includes full assembly language source code.

DISK 212
Alice This animation is an entry to the 1988 Badge Killer Demo Contest.
DiskSalv Disk recovery program for all Amiga file system devices that use either Amiga Standard File System or Amiga Fast File System. Creates a new filesystem structure on another device, with as much data salvaged from the original device as possible. Update to version on disk 177. Binary only.
DogsWorld This animation is an entry to the 1988 Badge Killer Demo Contest.

DISK 213
Cucug Animation of the Champaign-Urbana Commodore Users Group logo, entry to 1988 Badge Killer Demo Contest.
Icons Almost 300 icons in eight (!) colors. Uses special program to get eight color workbench to display these icons, made with DPaintII and IconGen. Most icons are miniatures of the main screen of their corresponding programs, or the picture they show, made with "iconize" and "recolor" from disk 85.

DISK 214
ArcPrep Prepares files and/or directories for archival with arc or any other program that can't scan through different directories and/or handle long filenames. V.2.1, includes source.
MandelVroom Mandelbrot/Julia-curve generating program that features five numerical generators (integer, ffp, ieee, 020, and 020/881) in hand-crafted assembly for maximum speed, online mouse selectable help for all functions, generation of multiple pictures simultaneously, a sophisticated user interface with shaded gadgets, etc. Zoom, magnify, color-cycling, contouring, auto-contouring, histogram, statistics, presets, extra-halfbrite support, overscan, orbits, pan mode, and more. Requires 1Mb or more of memory. Source to V.2.0, update to version on disk 78. A compiled binary, along with help files and example images, can be found on disk 215.
MemDiag Memory diagnostic program to identify addresses which produce memory errors, and a memory quarantine program which removes such defective addresses from the system's free memory list, until such time as the hardware errors can be corrected. V.1.1, includes source.
RunBack Another step in the evolution of Rob Peck's RunBackGround program, from disks 73 and 152. Allows you to start a new CLI program and run it in the background, then closes the new CLI. This version has been enhanced to use the NULL: device by Gunnar Nordmark (included), which is a "real" device, so it solves problems with previous versions of RunBack which used the Nil: "fake" device, causing many crashes. Includes source.
SmartIcon Shareware program is an Intuition objects iconifier. V.1.0 is limited to iconifying windows, which is still very handy. Adds a new "iconify gadget" to each window, that when clicked on, iconifies the window into an icon in the ram: disk. Same version as on disk 134, but now includes source code.

DISK 215
MandelVroom Mandelbrot/Julia-curve generating program that features five numerical generators (integer, ffp, ieee, 020, and 020/881) in hand-crafted assembly for maximum speed, online mouse selectable help for all functions, generation of multiple pictures simultaneously, a sophisticated user interface with shaded gadgets, etc. Also zoom, magnify, color-cycling, contouring, auto- contouring, histogram, statistics, presets, extra-halfbrite support, overscan, orbits, pan mode, and more. Requires 1Mb or more of memory. V.2.0, update to version on disk 78. Source is available on disk 214.

DISK 216
BackDrop Defines a pattern which will then be displayed on the workbench screen in the normally empty area behind all the windows. Similar in concept to DropCloth, but does not require workbench to be loaded (and does not cohabit very well with workbench). Includes source.
C64Emul April Fools spoof that turns your Amiga into a C64, or at least makes it look that way. Includes source.
Cloud Generates and displays fractal surfaces that look remarkably like clouds. Based on ideas from the book "Fractals" by Jens Feder. Binary only.
PrtSpool DOS handler, print program, and control program that implement a print spooling system. Like PRT:, the DOS handler waits for stuff to be sent to it to be printed. The print program does line numbering and page headers. The control program handles administrative functions. Binary only.
VirusX V.3.20 of the popular virus detection/vaccination program. Features a test for 8 new viruses since the 3.10 version on disk 175. Includes source.
Wanderer Neat little game with graphics and sound, ported from the Unix version, originally written on a Sun workstation. Idea came from games such as Boulderdash, Xor, and the Repton games from Superior Software. Includes builtin editor for extending the game by adding additional screens. V.2.2, includes source.

DISK 217
AntiCBS Animation cooked up by Leo in protest of CBS's coverage of the Hacker's Conference in Oct 88. After reading the transcript I was angered enough to feel this needed widespread distribution, even though it is quite old.
Echo Small replacement for AmigaDOS echo that will do some special functions, such as clear the screen, delete to bottom of screen, scroll the screen, place the cursor at a particular location, and set the text style and/or color. Includes source.
InstallBeep Replaces the DisplayBeep function so that an IFF 8SVX sound is played instead of the screen flashing. PlayBeep function runs as a task in the background and runs asynchronously so the length of the sound does not slow anything down. Includes a couple of sample sound files. V.1.1, binary only.
SnipIt Input handler wedge which allows you to clip text from any window and then paste that text anywhere, as though you had typed it on the keyboard. Mark the text you want to "snip" using the mouse, and then use the mouse to "paste" the last snipped text into the active window, requester,etc. V.1.2, includes source.
SonixPeek Utility to list all the instruments used by one or more Aegis Sonix score files. Can scan individual files, or search one or more directories, checking all score files in each directory. Output is a list of all the instruments you need to have present in order to be able to play the indicated score files. Includes source.
Stevie Public domain clone of the UNIX 'vi' editor. Supports window-sizing, arrow keys, and help key. V.3.6, includes source. Update to version 3.35a on disk 197.

DISK 218
EdLib Library of additional functions for Manx. V.1.1, update to V.1.0 from disk 183. Includes source.
Mandel Mandelbrot generator program. V.1.3, update to version on disk 111. New features and improvements include an ARexx interface, coordinates in sight, more state info saved with a picture, batch files, programmable functions, and more plotting options. Includes source.
Maze Lets you build mazes and then solve them. Mazes can be trivial one level mazes to very difficult three level. V.1.2, includes source.
PcPatch Patches for PCCopy and PCFormat from the EXTRAS disk, to allow reading, writing, and formatting of any kind of MS-Dos style disks, including 720K 3.5" diskettes. Binary only. Update to version on disk 163.
Scanner Makes commented C code of all intuition structures in memory. Structures will receive correct pointers towards each other. Scanner starts looking at IntuitionBase, and follows all pointers, storing them in memory. When finished, it writes all the structures to the standard output. V.1.0, includes source.
Worm Amiga implementation of the classic "worms" program, based on an article in Dec 1987 issue of Scientific American. You can specify the size and length of the worms, and the number of worms. Includes source.

DISK 219
DeepSky Database containing information on 10,368 non-stellar objects, 500 color contrasting easily resolved double stars, 70 stars for setting circles, and misc white dwarfs, red stars, binaries, etc. Distributed in zoo format, and is about 1.2 Mb after extraction. V.5.0.
Mv Unix style mv/cp/rm program that moves, copies, or removes files. Includes interactive mode, recursive mode, and force quiet mode. Copies file permissions, dates, and comments, supports arp style wildcards, supports moves across volumes, honors the delete bit. V.1.1, includes source.

DISK 220
DNet Link protocol that provides essentially an unlimited number of reliable connections between processes on two machines, where each end of the link can be either an Amiga or a Unix (BSD4.3) machine. Works on the Amiga with any EXEC device that looks like the serial.device. Works on UNIX with tty and socket devices. Achieves better than 95% average throughput on file transfers. V.2.0, an update to V.1.20 on disk 145. Includes sources for both the Amiga and Unix versions.

DISK 221
AllocMaster For controlling the amount of both Chip and Fast memory available to the rest of the system. Very useful for testing applications in low-memory situations. Snapshot to report differences in available memory before and after running an application. V. 1.17, binary only.
ANSIEd Demo version of an ANSI screen file editor. Easily create and modify a screen of ANSI-style text/graphics on the Amiga. Standard ANSI color set and text styles provided, along with some simple editing and drawing functions. This demo has save features disabled. V 1.2.0aD, binary only.
BallyII Amiga port of former arcade game Click. This version adds a "cheat" mode and fixes some minor bugs. V II+, update to version on disk 205. Binary only, shareware.
DFrame Utility to create animated bobs. Installs itself in DPaint II, after which you can draw each bob in DPaint II within its own frame and check the animation by calling DFrame from within DPaint. V. 1.02, binary only.
IFFM2 Demo version of IFF support module for Interface Technologies M2Amiga Modula-2 system. Includes a version of ViewILBM (with source) that uses the IFF support routines. V. 1.0.0D, binary only.
Steinschlag Tetris like game submitted by the author. V. 1.5, binary only.

DISK 222
MemGauge Tool to display current memory usage, much like the usage bar Workbench displays in root directories. V. 1.4, includes source.
Mischief In the long tradition of "display hacks". Uses the input.device to perform various acts of mischief. Includes source.
Plplot Library of C functions useful for scientific plotting on the Amiga. Lattice C compatible. Contour plotting, three dimensional plotting, axis redefinition, log-log plotting and multiple subpages. Plots can be displayed on a monitor or sent to a graphics file for subsequent printing. V. 1.00, includes source.

DISK 223
Csh Version 3.03a of a csh like shell derived from Matt Dillon's shell, version 2.07. Update to version on disk 199. Includes new filter commands, new dir option, new editing options, sourcing of a standard startup file, and some bug fixes. Includes source.
FixDisk Recover as much as possible from a defective disk. Can sometimes recover damaged (unreadable) tracks, check file integrity, check the directory structure, undelete files, copy or show files, etc. Full intuition interface. V.1.0, binary only.
GravSim Animate up to 6 planetary masses, all of which exert a mutual gravitational force on each other. Masses can be placed anywhere on the screen, and their mass and initial velocity can be determined by the user. Program then steps the animation through time, plotting and displaying the new position in the trajectory of each mass. V. 1.50, includes source.
Iff2Sun Small utility for those with access to a Sun workstation. Takes an Amiga IFF file and converts it to a Sun rasterfile format. Update to version on disk 174, with better parsing, support for HAM mode, some bug fixes. Source only.
IFFtoSUN Takes a standard IFF format image and translates it into a SUN rasterfile format, like the Iff2Sun program also on this disk. How-

ever, this one runs on the Amiga. V.1.31, includes source.
Paccer Pacman clone with sound and game screen editor. V.1.0, shareware, binary only.
PopInfo Small utility which "pops open" to give information about the status of devices and memory. V. 3.0, update to version on disk 204. Includes source.
SetCPU Allows the user to detect and modify various parameters related to 32 bit CPUs. Commands to enable or disable the text/data caches, switch on or off the '030 burst cache line fill request, use the MMU to run a ROM image from 32-bit memory, and to report various parameters when called from a script. V.1.5, update to V.1.4 on disk 187. Includes source.

DISK 224
CLImax For those who wish their CLI windows had 25 lines of 80 characters, the answer is here. Creates a borderless backdrop CLI window on a custom screen. Also thrown in is MoveSys, which reassigns SYS:, C:, S:, L:, DEVS:, LIBS:, and FONTS: to a new volume with one simple "pure" command. Includes source.
KickMem For A1000 hardware hackers that have done the Amazing Computing 512K upgrade. Will patch 1.2 or 1.3 kickstart disk to perform addmem during kickstart. This allows warm boot survivability of ram disk devices and eliminates addmem commands from startup sequence. V. 2.0, includes source.
MoreIsBetter These two hacks make MORE more useful. V is a small "pure" CLI command that acts as a front end for More, causing it to create its own window. Make V and More both resident! Fenestrate surgically alters the CON: window spec inside More enabling it to, for instance, use ConMan features to create a borderless window on the topmost screen (very useful with CLImax).
PetersQuest Follow a trail of hearts through a world of 20 levels, with porcupines and other hazards, to rescue Daphne. V. 1.0, binary only.
Who Rewrite of "who", from disk 79, which gives substantially more elaborate information about the tasks currently running (or waiting) on your Amiga. Includes source.
Xebec Couple of hacks to make life easier for those who have Xebec hard disks. One makes it more possible to Mount a Xebec hard disk with the Fast File System, the other is a compact head parking program. Includes source.

DISK 225
AmigaTCP The KA9Q Internet Software Package. Supports IP, ICMP, TCP, UDP, and ARP as basic services, and implements the FTP, Telnet, and SMTP protocols as applications. Runs on IBM PC and clones, Apple Macintosh, and Amiga. Includes source.
MyMenu Add your own menus to WorkBench menu strip, to run commonly used commands. Will allow you to execute both CLI and WorkBench programs, and is configured with a normal text file. Includes source.

DISK 226
Vit Both a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator, currently in use at SLAC (Stanford Linear Accelerator Center). VT100 part originally based on Dave Wecker et al.'s VT100, many enhancements made. Requires ARP, and has an ARexx port. XMODEM 1K/CRC and Kermit protocol support also included. V. 4.036, with many enhancements over previous version, 3.656, on disk 202. New features include support for other serial ports, external file transfer protocols, and "chat" mode. Improved behavior on the Workbench. Tektronix emulation now allows saving IFF files, PostScript files, and printing bitmaps to the printer. Many other enhancements and bug fixes. Binary only.

DISK 227
MidiLib Disk based library that permits sharing of the serial port by MIDI applications through a MIDI message routing and processing system. The midi utilities include a midi monitor to display incoming midi messages to the console, a routing utility, a midi library status utility, and more. V.2.0, update to version on disk 101. Includes significant speed enhancements, new utilities to play with MIDI files, and updated utilities, documentation and examples. Binary only (source for examples and bindings however).
PickPacket Gives you a visual display of the DosPacket structures that are sent to handlers, and lets you see the results. You can actually perform handler operations such as open files, read or write data, Examine or ExNext locks, and so forth, all by talking directly to the file system handler involved. V. 1.0, includes source.
RexxArpLib A library which originally was supposed to be an ARexx interface to the ARP library. However, it has also become an interface to various Intuition functions, containing over 50 functions including a file requester, string/boolean requester, environment variable functions, simple message window, wildcard expander, etc. V. 2.3, an update to V. 2.0 on disk 178. Binary only.
RexxMathLib Library which makes various high level math functions such as sin, tangent, log, etc, available in ARexx. Version 1.2 and 1.3, binary only.

DISK 228
Az Nice little text editor, fast, simple to use, and very Amiga'ized. V. 1.40, binary only.
Glib Text screen oriented librarian and editor for synths. Supports the TX81Z, DX100, DEP5, DW8000, and K-5. Includes source.
JazzBench Drop-in multitasking replacement for WorkBench. Has more features than WorkBench and is fully multitasking. Allows you to extend it, add your own menus, key shortcuts, etc. Alpha version 0.8, binary only.
Xoper Very comprehensive program to monitor and control system activity. Monitor cpu, memory usage, ports, interrupts, devices. Close windows, screens, show loaded fonts or last Guru code number. Clean up memory, flush unused libraries, devices, fonts, etc. Spawns its own process. Very handy background task to have loaded. V.1.3, update to V. 1.2 on disk 171. Assembly source included.

DISK 229
AlarmingClock Simple alarm clock program with a very alarming "ring". Includes source.
DrawMap For drawing representations of the Earth's surface. Can generate flat maps, mercator maps, a globe view, or an orbital view. Includes source.
Emporos You are living on the island of Emporos, where several countries exist. Your goal is to make one of these countries your own. There is only one way to do this, and you have to find it out. Binary only.
esuoM Little screen hack that causes the mouse pointer to move in the opposite direction of the mouse. Includes source.
LeftyMouse Swaps the functions of the left and right mouse buttons so that Lefties can use the mouse with their left hands. Includes source.
Shuffle Basic screen shuffler. Re-defines the key combination Left-Amiga-M to push the FRONT screen to the back, instead of pushing the Workbench screen to the back. Includes source.
Sim Simulator for register-transfer nets, which are used to describe hardware systems. Also provides a compiler to define new devices in addition to Sim's internal devices. V. 4.0, binary only.

DISK 230
AskTask Examine various bits of the task structures of all tasks in the system, from the lists attached to ExecBase. Displays priority, state, flags, stack, signals, etc. Also remove tasks, change the priority of a task, or send arbitrary signals to a task. V. 2/4/89, includes source.
Fedup Random access, byte oriented file-editor that gives option of viewing and editing any file (binary or ASCII) using either ASCII or hexadecimal notation. V. 2.1, binary only.
FileIt Simple database program, written in DRACO. Meant to be portable, thus does not use any of Intuition's facilities. V.1.0, includes source.
NComm Communications program based on Comm V. 1.34, with lots of very nice enhancements. Includes several auxiliary programs such as AddCall, CallInfo, IbmIso, PbConvert, and ReadMail. V. 1.8, binary only.
PrivHndlr Privilege violation handler for the 68010 cpu. Like DecIgel, but survives a reboot so you can use it with copy protected programs that run from boot. V. 3, includes source in assembly code.
Quattro Another Tetris like program. Three levels of play difficulty, sound effects, 43-color background, next stone preview, and joystick or numberpad control. V. 1.0, binary only, source available from author.

DISK 231
Diff Yet another diff program. This one implements the algorithm from Communications of the ACM, April 78. It produces output a little more user friendly than the standard Unix style diff programs. Includes source.
File Recognizes various types of files and prints what that type is. Recognizes font files, icon files, executable files, standard object files, compressed files, command scripts, C source, directories, iff files, LaTeX source, modula II source, arc files, shell commands and scripts, TeX source, dvi files, uuencoded files, yacc files, zoo archives, etc. V. 1.0, includes source.
NoClick2 Silences the clicking of empty drives on the B2000 under AmigaDOS 1.3. Should also work on A500. Binary only, source available from author.
Plot Package for making 2D and 3D plots conveniently. Intuition interface program (Plot) and MultiPlot and ThreeDPlot. V. 1.2, includes source to Plot.
Sed GNU sed (stream editor) program, ported to the Amiga. Copies the named files, or the standard input, to its standard output, while performing certain editing operations specified in the command line script or in a scriptfile. V. 1.02, includes source.

DISK 232
BallyIII Amiga port of former arcade game Click. Fixes some minor bugs and is faster than the previous versions. V. III, update to version on disk 221. Binary only, shareware.
Dbug Machine independent macro based C debugging package. Provides function trace, selective printing of internal state information, and more. Update to version on disk 102, now includes machine independent stack use accounting mechanism. Includes source.
ReSourceDemo Demo version of ReSource, an interactive disassembler for the Amiga. Complete version except that the "save" features have been disabled. V. 3.06, update to V. 0.36 from disk 192. Binary only.

DISK 233
Brik General purpose program that calculates both text and binary cyclic redundancy codes (CRCs). Text mode CRCs calculated by brik are portable across systems for files that are in the usual text format on each system. Binary mode CRCs are portable for files that are moved from system to system without any change. Can be used to verify and update an embedded checksum header in files. Runs under MS-DOS, UNIX system V, BSD UNIX, VAX/VMS, and AmigaDOS. V. 2.0, includes source.
CacheCard Accessory to SetCPU for use with A2620 cards or 68030 systems. Modifies the MMU table set up by SetCPU to selectively control caching for each expansion card. Also an example of how an accessory program can track down and modify the SetCPU MMU table without having to read all kinds of MMU registers and figure it out for yourself. V.1.00, includes source.
CrcLists Complete CRC check files for disks 001-231 using the brik program also on this disk. Made directly from my master disks. I have switched to brik, from the crc program used to make the lists on disks 133, 146, and 173, because it has more features and because source is available.

DISK 234
KwikBackUp Harddisk backup program that writes data track by track onto multiple floppy disks. Uses archive bit, saves and restores comments and protection flags, and skips over bad spots during restore. V. 1.0, includes source in Modula-II.
MuchMore Like "more", "less", "pg", etc. Uses its own screen to show the text using a slow scroll. Includes built-in help, commands to search for text, and commands to print the text. Works with PAL or NTSC, in normal or overscan modes. Supports 4 color text in bold, italic, underlined, or inverse fonts. V. 1.8, includes source in Modula-II and assembly code.
NetWork In long tradition of "screen hacks" for Amiga. Won't spoil the surprise by saying what it does. V.1.0, includes source in Modula-II.
PrintIt Print IFF pictures on Epson compatible 9-pin printers. Prints in many resolutions, with many ways to convert color pics to black and white. V. 1.0, includes source in Modula-II.
WBPic Replaces Workbench's color 0 with IFF hires non-interlaced picture, in 2 or 4 colors. V. 1.0, includes source in Modula-II.
XHair Replaces the mouse pointer with a screen wide crosshair, useful for positioning things vertically or horizontally. V. 1.0, includes source in Modula-II.

DISK 235
CalcKey Basic four function, memory resident, pop-up calculator which uses only about 24K of memory and can automatically type the answer to any calculation into the program you were using when it was popped up. V.1.0, binary only, shareware.
Ct Display images from a CT scanner, along with several new interesting sample images of scans of real people. The display software, though it has a primitive user interface, is quite powerful, including functions like convolutions, averaging, laplacians, unsharp masking, edge detection, gradients, etc. V. 2.2, update to version on disk 137. Binary only. Additional image disks available from author.
MirrorWars New game featuring sound, title music, and two player mode. You fight your opponent via laser rays, but beware of the mirrors reflecting your shots. Binary only.

DISK 236
AmigaBench Optimized Amiga assembly versions of the Dhrystone benchmark. Includes 68000 and 68020 versions.
DiskHandler Sample implementation of file system that reads and writes 1.2 format diskettes. Includes source.
Heart3D Find left ventricle outlines in the output of an Imatron CT scanner, and display wireframe animations of the beating heart. Includes several sample CT scan outputs. Binary only.
Ls V. 3.1 of the popular UNIX style directory lister. Update to V.2.0 from disk 178, includes some bug fixes, support for multiple wildcard pathnames, quicker sorting, a best-fit output, new output width and height options, etc. Includes source.
Proc Example program of how to create a full-fledged DOS process without needing to call LoadSeg first. Includes source.
XprZmodem Amiga shared library which provides ZModem file transfer capability to any XPR-compatible communications program. V. 1.0, includes source.

DISK 237
CLIPrint Example of printing to the CLI from as-

sembly code. Includes source.
CType Another text file reader, but is small, reasonably fast, and includes bi-directional scrolling, search, go to a given percentage, and printing capabilities. V.1.0, includes source in assembly.
DPlot Simple display program for experimental data, with the goals of supporting paging through lots of data and providing comfortable scaling and presentation. V. 1.0, source available from author.
ILBMLib Shared library (ilbm.library) to read/write IFF files, derived from the EA IFF code, with various enhancements. Includes examples of using the library from C code, assembly code, or BASIC, with source for examples and interface code.
ParOut Shows how to allocate and communicate directly with the parallel port hardware from an assembly language program. Includes source.
Speed Performance benchmark useful for comparing Amiga processing speeds. Performs 10000 iterations of some selected groups of 68000 instructions while using the DateStamp time function to record how many ticks it takes to complete. Then compared against two known prestored times, one for a stock A2000 Amiga and one for an A2620 enhanced A2000. V. 1.0, includes source in assembly language.
CWDemo Demo version of pop-up utility to control the color register assignments of Intuition custom screens. V. 3.1, binary only.
DMouse Versatile screen & mouse blanker, auto window activator, mouse accelerator, pop-cli, pop window to front, push window to back, etc, widget. Includes DLineArt, a screen blanker replacement program for use with DMouse. V.1.20, update to V.1.10 on disk 168/169. Includes source.
LabelPrint Allows you to easily print labels for your disks V. 2.5, update to V.1.9 from disk 210. Shareware, binary only (source available from author).
NGC Virus check program. Checks the bootblock on all inserted floppy disks and reports nonstandard ones. Checks the jump tables of all resident libraries and devices and reports suspicious entries. V. 1, includes source in assembly.
Pyth Draw the Tree of Pythagoras. V. 1.1, includes source.
Steinschlag Tetris like game submitted by the author. V. 1.8, update to version 1.5 from disk 221. Binary only.

DISK 239
Contains Forth programs from the JGoodies #1 disk, from Delta Research (the makers of JForth Professional 2.0). All of the material has been placed into a subdirectory (JGoodies). Below is a listing of subdirectories under JGoodies, and their contents.
Brunjes Various tools submitted together by the author. StringPkg is string package for both Forth style and NUL terminated strings. Date&Time are handy tools for getting and printing formatted date and time. Utils are utilities used by the other files. CursorControl is an example of moving the text cursor. SpaceOrEscape is a handy word for pausing or stopping program output. Includes source code.
Evolution Graphically simulates the evolution of a species of "bugs", the insect kind. Bugs, represented by moving blobs, eat bacteria represented by single pixels. They mutate, compete for food, reproduce and pass their mutations to their offspring. Standalone image, source code.
FFT Highly optimized Fast Fourier Transform tools for digital signal processing. Can be used to compute the frequency spectrum of a complex signal. Useful in a variety of different applications. Floating point and integer versions. Mixture of high level and assembly language code. Includes source (requires JForth).
Guru Handy "guru" number interpreter. Tells you what "81000009" means, for example. CLI usage only. Standalone image with readme file. Source code included.
H2J Converts 'C' style '.h' include files to JForth style '.j' files. Useful when developing interfaces to new Amiga libraries like ARP, etc. Standalone image and source code.
HAMmmm2 Graphics hack that displays moving lines in a HAM screen for a hypnotic effect. Uses sound tools from HMSL if available, for a drone sound that corresponds to the graphics image. Standalone image and source code.
HeadClean Combined with a fibre cleaning disk, can be used to clean the heads on your disk drives. Source code examples of accessing the Trackdisk device, and using gadgets are included. Standalone image with source code. Shareware. V. 2.0.
JustBeeps Simple example of using Audio and Timer devices. Plays a series of beeps whose pitches are based on a just intoned tuning system. Standalone image with source code.
Mandelbrot Fast Mandelbrot rendering program that uses some of the mathematical properties of the Mandelbrot set to greatly reduce the drawing time. Demonstrates graphics programming, assembly language, menus and IFF file I/O. Standalone image with source code.
NeuralNet Example of Neural Net programming converted to JForth. Demonstrates a programming technique that many say is the wave of the future for software. Simple demo that shows neural propagation. Standalone image with source code.
Textra Easy-to-use text editor allows multiple windows, and provides a simple mouse driven interface. Those familiar with Macintosh will be comfortable with Textra's Cut, Copy and Paste commands. Standalone image Documentation included. No source code.

DISK 240
CrossDOS "Tryware" version of mountable MS-DOS file system for the Amiga. Software product that allows you to read and write MS-DOS/PC-DOS and Atari ST formatted disks (V. 2.0 or higher) directly from AmigaDOS. This is a "read-only" version, which does not allow any writes to the disk. A fully functional version is available for a very reasonable price from CONSULTRON. V. 3.02, binary only.
Dis AmigaDOS shareable library which implements a symbolic single-instruction disassembler for the MC68000 family and a program which uses the library to disassemble/dump AmigaDOS object files, making full use of symbolic and relocation information. Includes source code in Draco.
DM-Maps IFF maps to the Dungeon Master game. All 14 levels.
MemLib Link library of routines to aid in debugging memory problems. Works with Lattice C 5.0 and possibly with earlier versions. Features include trashing all allocated memory, trashing all freed memory, keeping track of freed memory with notification if it is written to, notification of memory freed twice or not at all, notification of overrunning or underrunning allocated memory, generation of low memory conditions for testing purposes, and identification of violations of memory use by filename and line number of the allocating routine. Includes source.
RunBack V. 6, update to version on disk 152 (version on disk 214 appears to be on a different evolutionary path). This version compiles under Lattice with many optimizations enabled, and can be made resident. Includes source.
XprLib External file transfer protocol library. Document and code example for implementing external file transfer protocols using Amiga shared libraries. Update to version included with the vlt program on disk 226.

DISK 241
ASDG-rrd Extremely useful shareware recoverable ram disk. AmigaDOS device driver implements a completely DOS compatible disk device in memory that survives resets, guru's, and crashes. Absolute must for those with lots of ram. Update to version on disk 58. Now works with up to 8Mb of memory. Was rewritten in assembly and is now faster and much smaller. Binary only.
CBBS The WORLI BBS system for use in amateur radio. Originally written for IBM-PC compatibles. V. 6.1c with source code.
Fix68010 Patches executables that fail to run on machines equipped with an M68010, so that they no longer use the prohibited priviledged instructions.
Man Similar to the UNIX "man" program. Displays information about a topic from manual pages. Does not include any database of topics, you have to supply your own. V. 1.2, includes source.
NoClick Silences the clicking of empty drives on the B2000 under AmigaDOS 1.3. Should also work on A500. V. 3.4, update to version on disk 231. Includes assembly source code.
Tiles Basic tile game like Shanghai or GunShy. A board is covered with a set of 144 tiles, 36 different sets of 4 identical tiles, each with a picture on it. The object is to remove all the tiles, 2 at a time, by matching identical tiles. V. 2.1, includes source in Modula II.

DISK 242
BootBlocks Detailed documentation on what a bootblock is and how it works, along with some sample bootblocks and a program to install a custom bootblock. Includes source for the sample bootblocks and the install program.
Check4Mem Check for a specified amount of memory, with certain attributes, from a batch file. If requirements are not met, a WARN returncode is generated. V. 2, includes source.
CustReq Glorified ASK command for your startup-sequence. Generates a requester with the specified title, text, positive and negative gadgets (either of which can be the default), and an optional timeout value. V. 2, includes source.
FileReq Second version of a file requester, much more powerful than the one on disk 204. Shareware, includes source.
FullView Text viewer that uses gadgets at the bottom of the screen (thus can display text 80 columns wide), opens up to the full height of the workbench screen, has fast scrolling, and can work with compressed files (file compression program included). Shareware, binary only, source available from author.
Image-Ed Icon editor that allows you to draw and edit images up to 150 by 90, in up to 16 colors. Freehand drawing, empty or filled rectangles, ellipses, and triangles, lines curves, and polygons, copy, flip about x or y axis, stretching and condensing, flood fill and complement, text with selection and loading of font style, undo, magnified and normal sized images, and two active drawing screens at once. V. 2.2, update to version 1.9 on disk 211. Binary only, source available from author.
JAR Shareware game (Jump And Run) using 3-D graphics. Collect the blue pills lying on the floors and steps, don't fall down or off the steps, and avoid several monsters wandering about. You can collect various sorts of weapons to use against the monsters. V. 1.0, binary only, source available from author.
JPClock Short clock program just packed with features. V. 1.2, update to version on disk 204. Includes source.
PPrefs Designed to replace the standard preferences, shorter, more efficient, and easier to use. Binary only.
PaletteReq Easy way to set the palette of any screen from your program. Includes source.
PopInfo Small utility which "pops open" to give you information about the status of your devices and memory. V. 3.1, update to V.3.0 on disk 223. Includes source.
ZeroVirus Fully integrated virus checker and killer, with bootblock save and restore features. Finds both bootblock and file based viruses. V.1.3, binary only.

DISK 243
FragIt Dynamic memory thrasher. Randomly allocates and deallocates psuedo-random size values of memory, ranging from 16 bytes to 50000 bytes by default. Result is an allocation nightmare, thousands of memory fragments are being created and destroyed continuously. This puts stress on the memory allocation routines of an application undergoing testing by simulating a very busy, highly fragmented memory environment. V. 2.0, featuring many bug fixes, a full intuition interface, configuration settings via the icon, and more. Includes source.
ImageLab Performs image processing on IFF pictures. Includes standard image processing functions such as convolution, averaging, smoothing, enhancement, histograms, FFT's, etc. Also file conversion functions, a clipboard, and other useful functions. V. 2.2, binary only.
LPE LaTeX Picture Editor is a graphical editor for producing "pictures" for the LaTeX system, which may be imported by LaTeX. Draw boxes, dashed boxes, lines, vectors, circles, boxes with centered text, and plain text. V. 1.0, binary only.
NoClick Silences the clicking of empty drives on B2000 under AmigaDOS 1.3. Should also work on A500. V. 3.5, update to V.3.4 on disk 241. Includes assembly source code.
Password Enhances your computers security by making it complicated enough that users without your password will get discouraged trying to boot and use your system. Should keep out most casual or nontechnical users. V. 1.21p, binary only.
Pcopy Intuition based disk copier similar to the resident "DiskCopy". V. 2.0, a highly upgraded rewrite of the version on disk 151. High speed diskcopy with write-verify and data recovery from damaged tracks. Friendly in its usage, as well in its multitasking properties. Binary only.
SimGen Will add a 2 or 4 color picture to your WorkBench screen. If the picture is digitized, it will look much like a genlock, hence the name SimGen (Simulated Genlock). Binary only.
SuperLines New lines demo with realtime control panel to change various aspects of the action. 10 builtin color palettes, support for things like color "smudge", color cycling, color "bounce", multiple resolutions, and can display either lines or boxes. V. 1.0, binary only.
WarpUtil Warp (V. 1.11), UnWarp (V. 1.0), and WarpSplit (V. 1.1). Warp reads raw filesystems and archives them into a compressed version in a normal file. UnWarp turns them back into filesystems. WarpSplit splits them up into smaller pieces on a track by track basis. Binary only.

DISK 244
BBChampion BootBlockChampionIII, very nicely done program that allows you to load, save, and analyze any bootblock. V 3.1, binary only.
BootIntro Creates a small intro on the bootblock of any disk, which will appear after you insert the disk for booting. The headline can be up to 44 characters. The scrolling text portion can be up to 300 characters. V. 1.2, update to version 1.0 on disk 188. Binary only.
FMC Alternative to the NoFastMem program. Uses a cute little switch gadget to turn fast memory on or off. V. 1.2, includes source in assembly code.
SizeChecker Uses a list of possible sizes of a file to check for unexpected changes in the size of those files. For example, it can be used to spot a link virus or to point out changes in the configuration of your system. With the appropriate comments added to list, you can check to see what version of the files you are using (1.2, 1.3, 1.4, ARP, etc). V. 1.0, binary only.
TextDisplay Text display program, like "more" or "less", but about half the size and handles all screen formats (pal/ntsc, interlace/non-interlace, etc). V. 1.52, update to version 1.1 on disk 188. Binary only.
XColor Designed to change the colors of any screen. Also add and subtract bitplanes in the screen, or convert the screen to black and white (grayscale). Handles HAM and EHB screens. V. 1.2, includes source in assembly code. ❑

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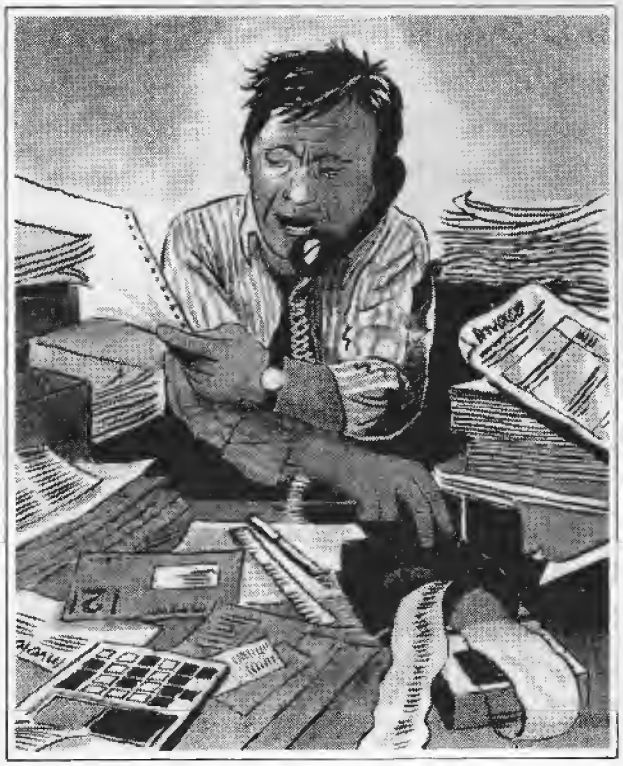

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